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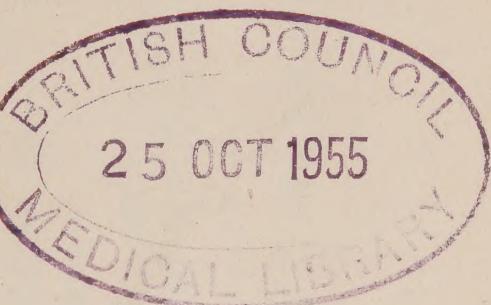


BASIC AND BATTLE PHYSICAL TRAINING

PART III

SYLLABUS OF BATTLE PHYSICAL TRAINING AND BATTLE PHYSICAL EFFICIENCY TESTS

1946



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*Prepared under the direction of
The Chief of the Imperial General Staff*

THE WAR OFFICE,
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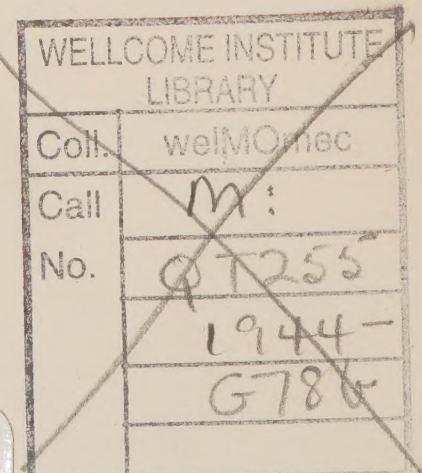
PREFATORY NOTE

1/4/23/13/11

Basic and Battle Physical Training is the main title of a series of pamphlets that will replace Purposeful and Basic Physical Training, 1942. Each pamphlet, dealing with one or more aspects of physical training will be issued separately.

- Part I.—General principles of basic and battle physical training, and methods of instruction.
- Part II.—Basic physical training tables and basic physical efficiency tests.
- Part III.—Syllabus of battle physical training and battle physical efficiency tests.
- Part IV.—Endurance training.
- Part V.—Jumping, vaulting, climbing, scaling and obstacle training.
- Part VI.—Pulling, pushing, lifting and carrying.
- Part VII.—Throwing, balancing, mountaineering and ski exercises.
- Part VIII.—Swimming, life saving and improvised aids to crossing water obstacles.
- Part IX.—Boxing and wrestling.
- Part X.—Shoot to kill (physical training for weapon training).
- Part XI.—Team games and recreational training.

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BASIC AND BATTLE PHYSICAL TRAINING

PART III

SYLLABUS OF BATTLE PHYSICAL TRAINING AND BATTLE PHYSICAL EFFICIENCY TESTS

CHAPTER I

SYLLABUS OF BATTLE PHYSICAL TRAINING

SECTION 1.—INTRODUCTION

1. The purpose and general principles of battle physical training are given in detail in Basic and Battle Physical Training, Part I, Chapter 2.
2. Owing to the widely varying conditions under which physical training for Field Force units takes place, it is neither possible nor desirable to prescribe Tables of exercises for trained soldiers.

SECTION 2.—THE SYLLABUS

3. The following syllabus of battle physical training will therefore be used by all field force units. The syllabus, building on the fundamental techniques of the essential bodily skills taught to the recruit in his basic physical training, contains a large variety of activities which teach the application of these skills in many types of military activity.
4. The syllabus is so elastic that it can be readily adapted to suit the different conditions of accommodation and of time available for physical training in field force units.
5. The material offers a wide selection, enabling the instructor to compile a progressive series of periods for any particular unit or circumstances, and to adapt the work to the special physical needs, (eg, strength, endurance or agility) of the arm of the service concerned.
6. The exercises and activities are designed to help to keep the trained soldier physically fit and to develop toughness, hardness and fighting fitness.
7. Vigorous active movement should be the keynote of the physical training period for trained soldiers, and the men should be kept going at a good speed throughout.

8. Interest and enjoyment are essential contributory factors to successful physical training of field force troops. The more the work can be given the character of spontaneous physical recreation, the more it will appeal to the men and the greater value they will derive from it.

9. Physical training apparatus is not normally provided for field force units, but with a little ingenuity, the instructor can improvise many useful pieces of apparatus and equipment. A visit to the nearest salvage depot will generally result in the acquisition of materials suitable for rapid conversion into improvised physical training apparatus. For ideas concerning the most suitable type of improvised apparatus reference should be made to Chapter 3 of this pamphlet.

10. The work to be taken during the physical training period must be carefully planned and prepared beforehand. Whenever possible, a progressive series of physical training periods should be arranged to cover the time available for training.

11. In field force units the dress for physical training will depend on the type of activities to be carried out during the period, and on the stage of training of the men. As physical training for trained soldiers usually takes place out of doors, the dress for Part I of the period will normally be denim trousers, boots and gaiters. As a general rule, the men will work stripped to the waist. If weather conditions do not permit of this, however, the cardigan should be worn in preference to the shirt. This enables the shirt to be kept dry for wear after exercise when the cardigan is taken off. So far as Part II of the period is concerned, for most of the activities, the amount of clothing and equipment will be gradually increased until battle order is worn. The exceptions to this general rule will be such activities as groundwork, heaving and abdominal exercises, medicine ball, stick and log exercises, boxing, wrestling and the early stages of jumping and vaulting. For these activities the men will be dressed as for Part I of the period. For the more purposeful vaults, and for endurance training, rifle, shell and digging exercises, climbing, scaling, pulling, pushing, lifting, carrying, balancing, fieldcraft movements, throwing, obstacle training and close combat, the amount of clothing and equipment to be worn will be gradually increased as the training progresses. For many of these activities the rifle should also be carried. The dress for Part III will be the same as that worn for Part II of the period.

12. As a means of developing physical efficiency, good lung power, a strong heart and a stable nervous system, games of all kinds should be given an important place in battle physical training. Games, however, must be conducted with purpose and energy, and the instructor must ensure a rigid observance of all details connected with them, otherwise they will become purposeless and ineffective.

13. Well directed competition is a valuable aid to the stimulation and development of team spirit. Used judiciously, it can also be a most useful spur to effort.

14. Quick reaction activities should be introduced whenever the men need "putting on their toes" physically or mentally. It is most essential that they should be introduced at the right moment, and they must not be overdone or they will entirely lose their value. They must also be varied in type and occupy as many men as possible at one time. The number of quick reaction activities in any one period will depend upon the mental capabilities and general alertness of the men in the class, and on such external factors as the type of day or the surroundings. Wisely used, these activities help to stimulate quick thinking and quick action.

Variations in class arrangements should also frequently be introduced. This element of unexpectedness in class arrangements adds to the interest and enjoyment of the period, and helps to develop alertness. Circles, semi-circles, and "V" formations should frequently be used as alternatives to line formations.

The instructor should carefully study the notes on the prevention of accidents given in Section 14 of Part II of Basic and Battle Physical Training, 1944. Special care must be taken to see that improvised apparatus is firmly and safely constructed, and that ropes and other apparatus suspended from trees are securely fixed by lashing. Frequent inspections should be made of all improvised apparatus, and of all obstacles, on obstacle courses, to make sure that they are safe for use.

SECTION 3.—CONSTRUCTION OF BATTLE PHYSICAL TRAINING PERIODS

15. The general arrangement of each period should be as follows :—

PART I.—GAME-FORM EXERCISES (7 minutes)

This part should consist of seven game-form exercises. These exercises are intended to warm the body and to prepare it for the more vigorous exercises and activities which come later in the period. Circulation and respiration are stimulated, and the men are "put on their toes", physically and mentally. In addition, these game-form exercises provide a brisk and enjoyable start to the period.

NOTES.—(a) When the whole period is devoted to endurance training Part I should be omitted.

(b) If a more formal and corrective type of Part I is deemed necessary for any particular group of trained men (eg, drivers who spend long hours sitting in cramped positions, or men in certain static units, or those employed mainly in sedentary occupations), a choice of exercises should be made from Part I of Basic Physical Training Tables 4–6, which are contained in Part II of Basic and Battle Physical Training, 1944.

PART II.—GROUP ACTIVITIES (10–40 minutes)

This is the "purposeful" or "objective" part of the period and its aim is to develop strength, endurance, agility, dexterity, speed, alertness, dash, determination, team work and the fighting spirit. A wide range of activities is provided in the syllabus of battle physical training given in section 4 of this pamphlet. The instructor should, therefore, find no difficulty in choosing suitable activities for this part of the period.

In the syllabus the activities are grouped under the following headings :—

Group 1.—Strength

- (a) Abdominal exercises.
- (b) Climbing.
- (c) Gun and vehicle manhandling.
- (d) Heaving.
- (e) Lifting and carrying.
- (f) Log exercises.
- (g) Quick reaction activities using logs.
- (h) Medicine ball exercises.
- (i) Quick reaction activities using medicine balls.
- (j) Pulling and pushing.
- (k) Scaling.
- (l) Stick exercises.
- (m) Strengthening games.

Group 2.—Endurance

- (a) Basic walking.
- (b) Basic running.
- (c) Scout pace.
- (d) Hill walking.
- (e) Road work.
- (f) Obstacle course.
- (g) Cross-country walking.
- (h) Cross-country running.
- (i) Forced marching.

Group 3.—Agility, dexterity and speed*Agility*

- (a) Jumping.
- (b) Vaulting.
- (c) Groundwork.
- (d) Fieldcraft movements.
- (e) Surmounting obstacles.
- (f) Rapid dispersal from moving vehicles.
- (g) Potted sports.

Dexterity

- (a) Balancing.
- (b) Pick and shovel exercises.
- (c) Rifle exercises.
- (d) Shell exercises.
- (e) Stick exercises.
- (f) Throwing.

Speed

- (a) Sprinting.
- (b) Relay races.

Group 4.—Combat

- (a) Boxing.
- (b) Wrestling.
- (c) Close combat.

PART III.—CARRIAGE (3 minutes)

This part is intended to assist in the development of good carriage through purposeful coaching and correction. It also gives an orderly ending to the period and brings the class under the more formal control of the instructor after working in small groups during the previous part of the period.

SECTION 4.—PRINCIPLES AND METHOD OF INSTRUCTION

16. The principles of instruction are given in detail in Section 16; the essential qualities of the successful instructor are described in Section 17, and general notes for instructors are contained in Section 18 of Part I of Basic and Battle Physical Training, 1944.

17. The method of instruction to be employed during a period of battle physical training is as follows :—

PART I

18. For this part the instructor will choose for each period one alternative from each of game-form exercises 1-7 listed in Section 5 of this pamphlet. The class will be taken as a whole, and the "demonstration method" of instruction will be used. The instructor will give as good a demonstration as possible of the game-form exercise that is to be performed while the men are standing or sitting at ease. They will then perform the exercise themselves and the instructor will coach and correct faults. Each game-form exercise will be demonstrated and practised in turn. When these exercises have become well known, there is no need for the instructor to continue demonstrating every exercise every period. Exercise should follow exercise as quickly as possible, (allowing, of course, for adequate practice of each exercise), so that continuity is maintained throughout this part of the period.

19. If use is made of a more formal Part I consisting of rhythmical exercises selected from one of the later basic physical training tables, then the method of instruction will be the "follow the leader" method described in Section 5, paragraph 11, of Part II of Basic and Battle Physical Training, 1944.

20. If it is felt necessary or desirable, one or two quick reaction games or activities may be introduced for a moment or two into Part I. A careful selection of the game-form exercises, however, will normally make the introduction of quick reaction activities unnecessary in Part I.

PART II

21. The selection of activities for Part II of the period will depend on the time, apparatus and facilities available, number of instructors or leaders, weather conditions, type of unit, and on the age and fitness of the men. If too many activities are attempted little will be achieved. Generally speaking, 10 minutes should be allowed for each type of activity. If the total time allowed for the period is 20 minutes, this will allow 10 minutes for Part II, and there will be time for only one form of activity which should be chosen from one of the Groups detailed in Section 5 of this pamphlet. If the total time for the period is 30 minutes, 20 minutes will be available for Part II, and two different activities should be chosen. Similarly, if the total time is 40 minutes, three different activities, each taking 10 minutes, will be possible in Part II.

22. For this part the class will be divided into several groups, according to its size, number of activities chosen, and space and apparatus available. By choosing the activities carefully, the necessary variety and interest can be maintained from period to period. The work may also be given a bias towards the special physical needs of the unit. If strength is the main physical quality required, Part II should consist mainly of strengthening activities. If agility is especially required, Part II should consist mainly of activities which develop agility, and so on.

23. When the time available permits of several activities being included in Part II, the potted sports method of organization should be used, several activities proceeding simultaneously. The time available should be divided equally between the activities, the men changing from activity to activity every 10 minutes, so that adequate practice is given in each activity.

24. The change from one activity to the next will be made competitive, the men sprinting from place to place by the shortest route. As soon as the new place is reached they will immediately commence the new activity.

25. When apparatus is used in Part II, standing about "waiting for a turn" at the particular activity must be reduced to the minimum. The aim should always be to keep as many men as possible actively employed throughout.

26. The "demonstration method" of instruction will be used for this part.

27. Quick reaction games and activities may be introduced anywhere in Part II, as required.

PART III

28. The instructor will put out a marker and the class will fall in on the marker. This will be followed by the position of attention, which will be carefully coached and corrected by the instructor, and, finally, there will be a short spell of marching in squad formation with special attention to good carriage and poise of body.

SECTION 5.—DETAIL OF THE SYLLABUS OF BATTLE PHYSICAL TRAINING

29. The details of the syllabus of battle physical training are as follows :—

PART I.—GAME-FORM EXERCISES (7 minutes)

Choose one alternative from each of exercises 1-7 every lesson :

1. Running

- (a) Racing round the course.
- (b) Dodge and mark.
- (c) One against three.
- (d) Small groups.
- (e) Horses and jockeys.
- (f) Walking and running in large circle ; on signal rapid walking or sprinting to pass man in front on the outside.
- (g) Chase the dodger ("Chase him").
- (h) Chain racing.
- (i) George's 100 up.
- (j) Running maze.
- (k) Running circle chase.

2. Arm (*see Page 8*)

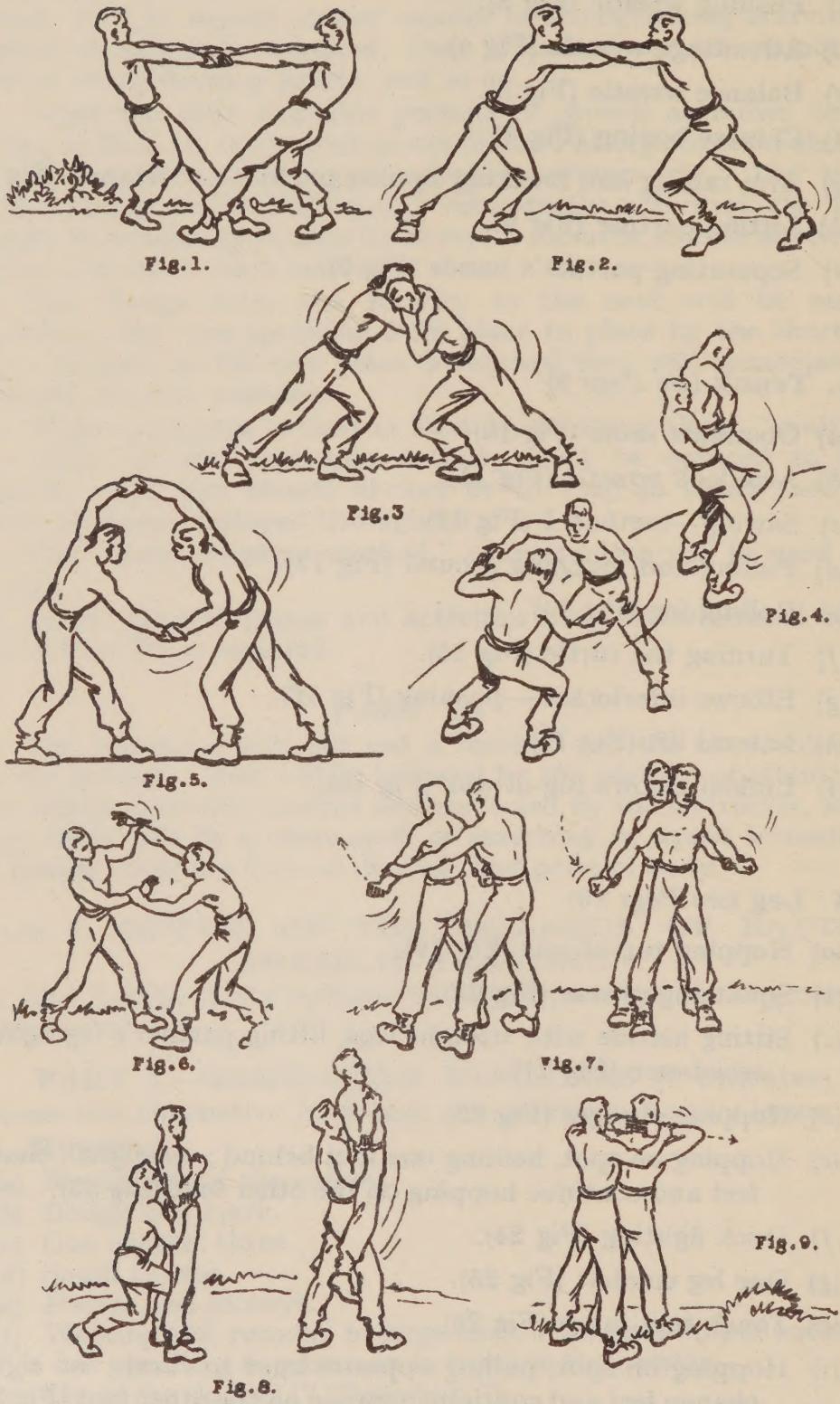
- (a) Pulling contest (Fig 1).
- (b) Pushing contest (Fig 2).
- (c) Pushing wrestle (Fig 3).
- (d) Advantage wrestle (Fig 4).
- (e) Balance wrestle (Fig 5).
- (f) Chinese boxing (Fig 6).
- (g) Arm raising and lowering against partner's resistance (Fig 7).
- (h) Lifting partner (Fig 8).
- (i) Separating partner's hands (Fig 9).

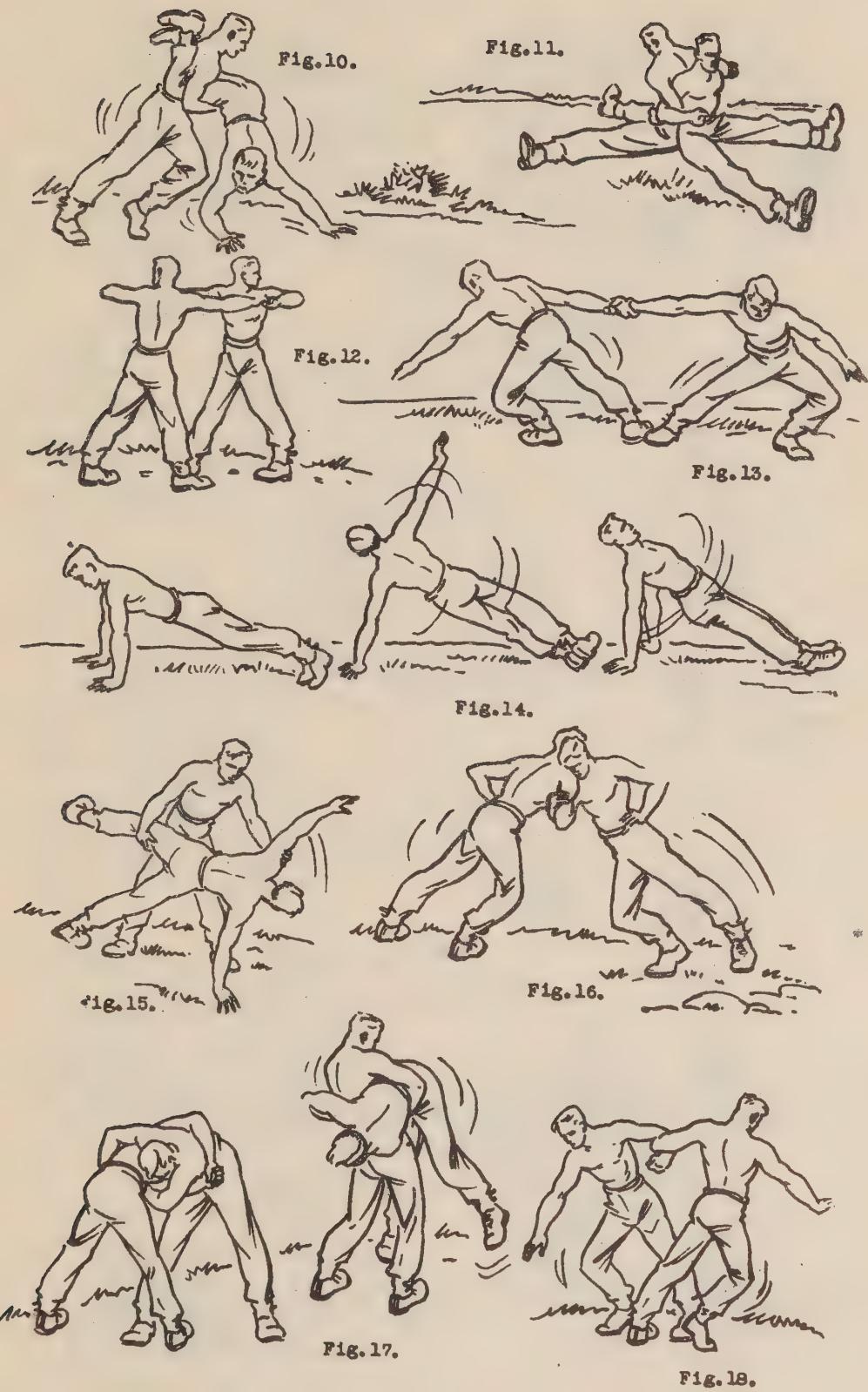
3. Trunk (*see Page 9*)

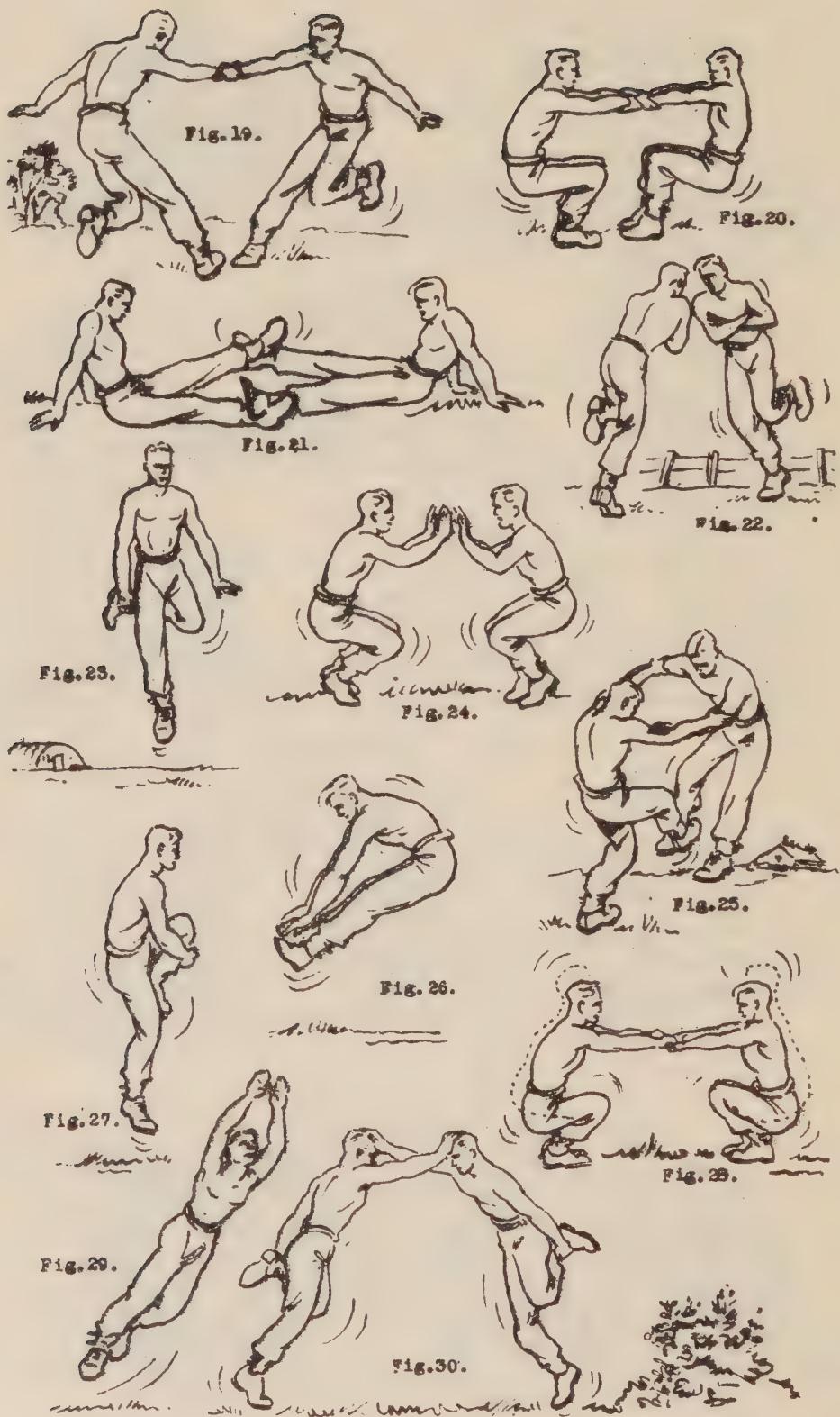
- (a) Obstinate mule (Fig 10).
- (b) Arm lock wrestle (Fig 11).
- (c) Sawing—method I (Fig 12).
- (d) Pulling and touching ground (Fig 13).
- (e) Rolling log (Fig 14).
- (f) Turning the turtle (Fig 15).
- (g) Elbows interlocked—pushing (Fig 16).
- (h) Lateral lift (Fig 17).
- (i) Linked elbows tug-of-war (Fig 18).

4. Leg (*see Page 10*)

- (a) Hopping tug-of-war (Fig 19).
- (b) Squat tug-of-war (Fig 20).
- (c) Sitting astride with straight legs, lifting partner's leg against resistance (Fig 21).
- (d) Hopping charges (Fig 22).
- (e) Hopping on spot, holding one foot behind ; on signal, change feet and continue hopping on the other foot (Fig 23).
- (f) Duck fighting (Fig 24).
- (g) One leg combat (Fig 25).
- (h) Touch toes jump (Fig 26).
- (i) Hopping on spot, pulling opposite knee to chest ; on signal, change feet and continue hopping on the other foot (Fig 27).
- (j) Knee springing (Fig 28).
- (k) Jumping to save imaginary goals (Fig 29).
- (l) Hopping pushing (Fig 30).







5. Arm (*see Page 12*)

- (a) Line tug-of-war (Fig 31).
- (b) Line pulling (Fig 32).
- (c) Punching the hand (Fig 33).
- (d) Poison (Fig 34).
- (e) (Prone lying) One hand wrestle (Fig 35).
- (f) Lift resisting partner (Fig 36).
- (g) Stretch and touch (Fig 37).
- (h) Forearm wrestle (Fig 38).
- (i) Pushing partner's hand down against resistance (Fig 39).
- (j) Sawing—method II (Fig 40).

6. Trunk (*see Pages 13 and 14*)

- (a) Dead man (Fig 41).
- (b) Head raising against resistance (Fig 42).
- (c) Obstinate calf (Fig 43).
- (d) Ankle grasp pushing (Fig 44).
- (e) Lifting the log (Fig 45).
- (f) Lifting the sack (Fig 46).
- (g) Kangaroo march (Fig 47).
- (h) Neck pull (Fig 48).
- (i) Neck pressing and trunk raising against resistance (Fig 49).
- (j) Bent front support wrestle (Fig 50).
- (k) Cycling (Fig 51).
- (l) Chinese tug-of-war (Fig 52).
- (m) Neck lift (Fig 53).
- (n) Kicking the hand (Fig 54).
- (o) Scrumming (Fig 55).

7. Leg (*see Pages 15 and 16*)

- (a) Squat boat race (Fig 56).
- (b) Indian wrestle (Fig 57).
- (c) Hopping on spot, moving forward and backward or moving round in a circle, while holding partner's leg (Fig 58).
- (d) Crow hopping on spot or moving round (Fig 59).
- (e) Jumping to head an imaginary football (Fig 60).
- (f) Knee dip (Fig 61).
- (g) Fighting cocks (Fig 62).
- (h) Hopping race, holding one foot in front of body with opposite hand (Fig 63).
- (i) Chinese get-up (Fig 64).
- (j) Russian dance step (Fig 65).
- (k) Upward jump in threes (Fig 66).
- (l) Squat charges (Fig 67).
- (m) Elbows interlocked, pushing backward (Fig 68).

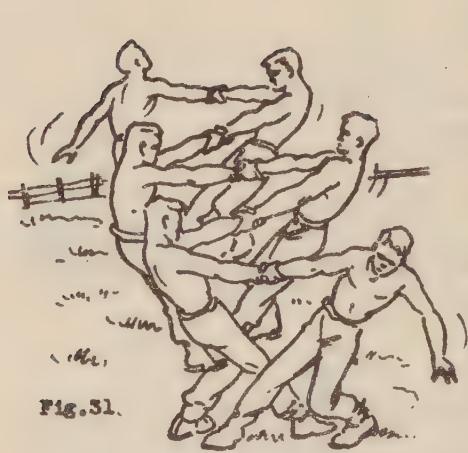


Fig. 31.



Fig. 32.

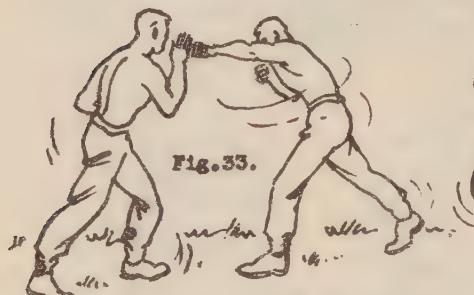


Fig. 33.



Fig. 34.



Fig. 35.



Fig. 36.

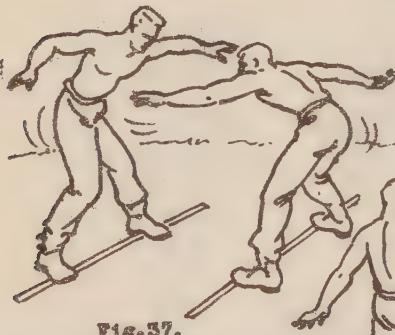


Fig. 37.

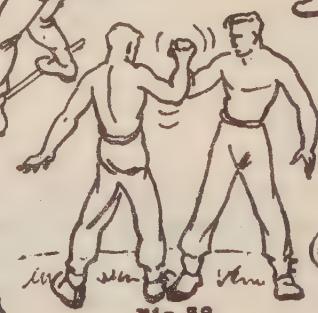


Fig. 38.

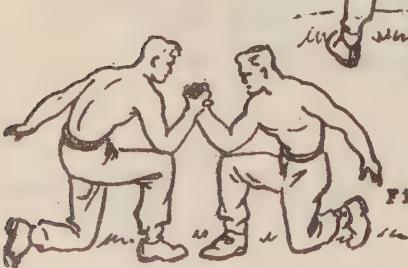


Fig. 39.



Fig. 40.



Fig. 41.



Fig. 42.



Fig. 43.



Fig. 44.



Fig. 45.



Fig. 46.



Fig. 47.



Fig. 48.



Fig. 49.



Fig. 50.



Fig. 51.



Fig. 52.



Fig. 53.



Fig. 54.



Fig. 55.

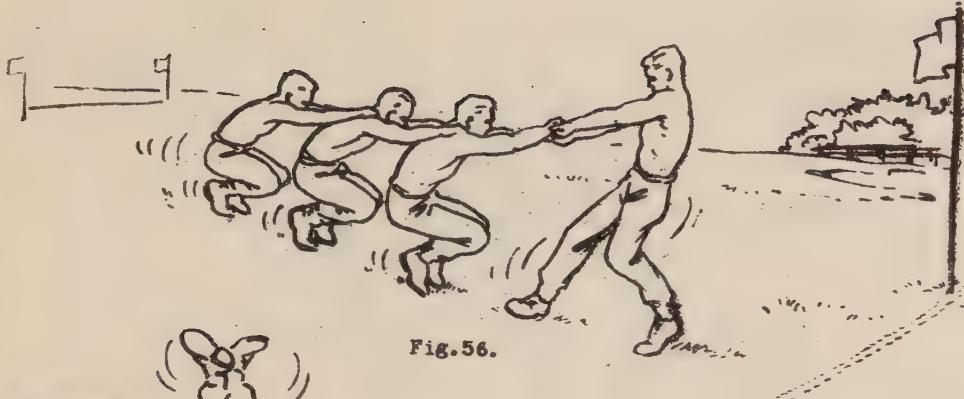


Fig. 56.



Fig. 57.



Fig. 58.

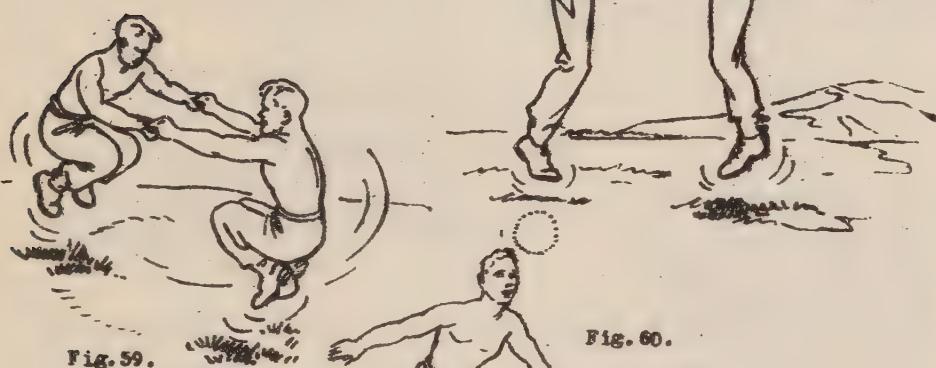


Fig. 59.



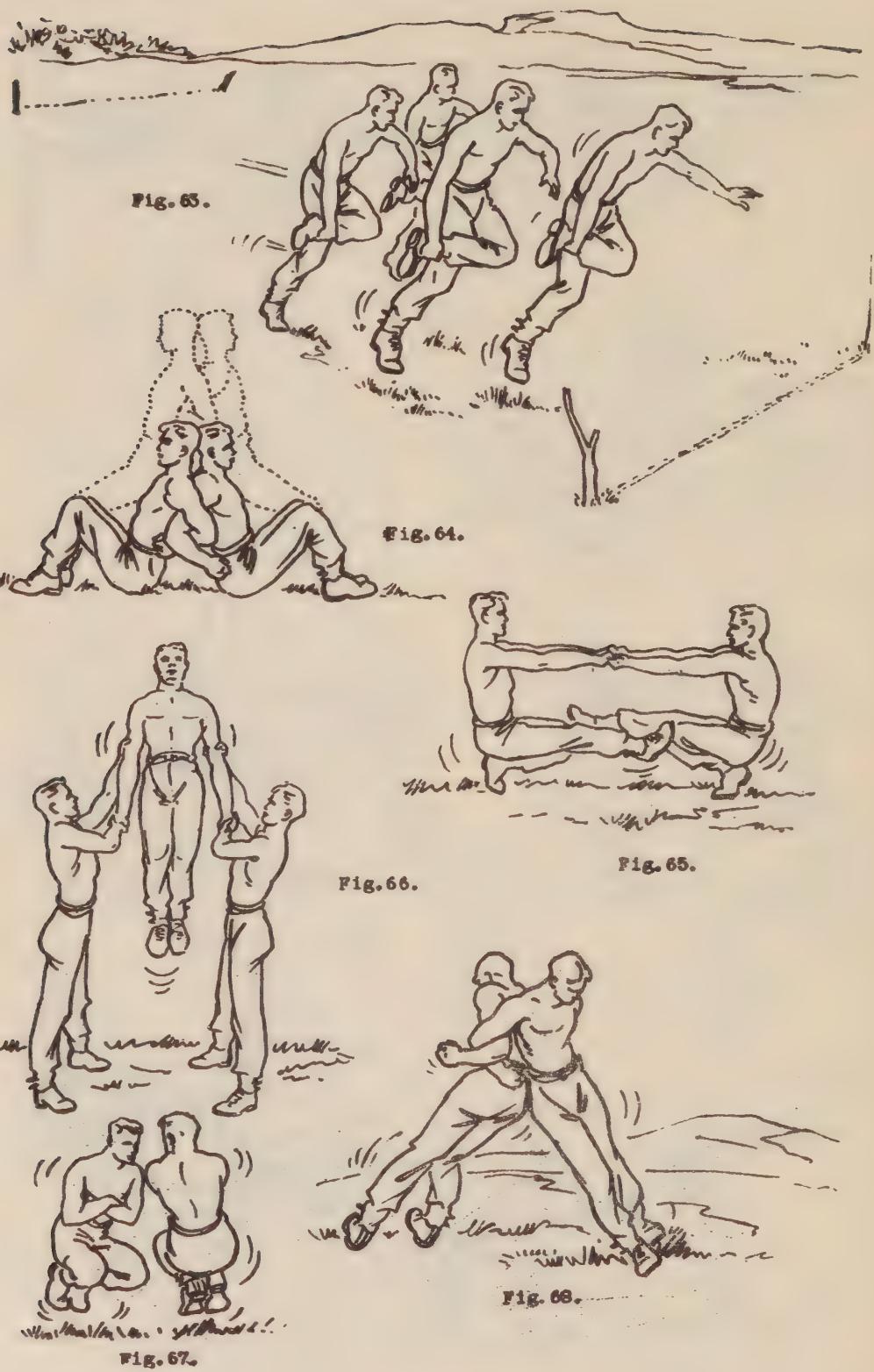
Fig. 60.



Fig. 61.



Fig. 62.



PART II.—GROUP ACTIVITIES (10-40 minutes)

Choose one or more activities from the same group for each 10 minutes available :—

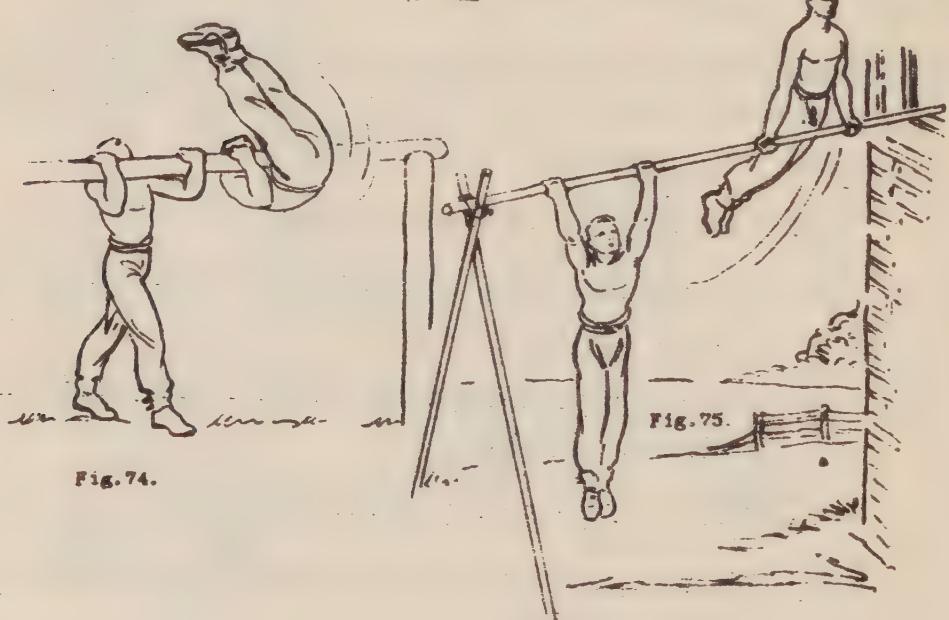
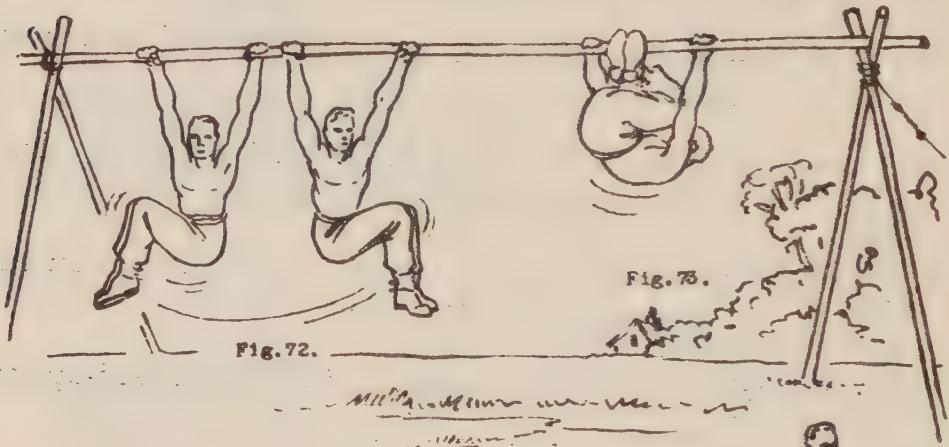
1. Strength

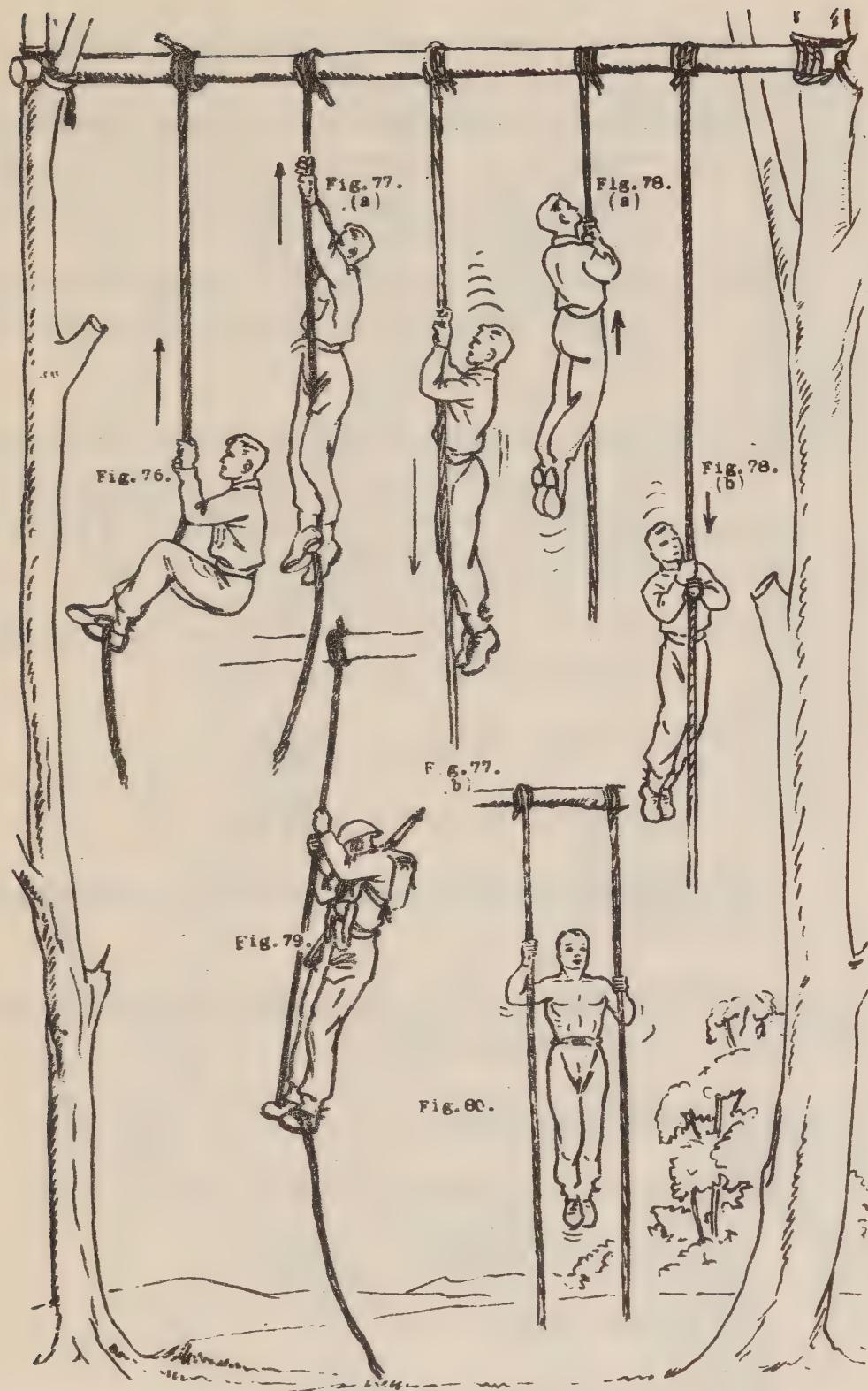
- (a) *Abdominal exercises (tubular scaffolding ; improvised beam ; benches and stick, in threes, or monkey rack).* (See Page 18.)

 - (i) (Hanging, over grasp) One knee raising, left and right. Later, knee raising (Fig 69).
 - (ii) (Hanging, over grasp) Cycling (Fig 70).
 - (iii) (Hanging, over grasp) Knee raising, leg stretching forward and lowering (Fig 71).
 - (iv) (Hanging, over grasp, knees raised) Knee moving from side to side (Fig 72).
 - (v) (Hanging, over grasp) Knee raising high to touch apparatus with insteps or shins (Fig 73).
 - (vi) (One foot forward, under heave grasp) Circling forward-upward (Fig 74).
 - (vii) (Hanging, under grasp) Circling forward-upward (Fig 75).

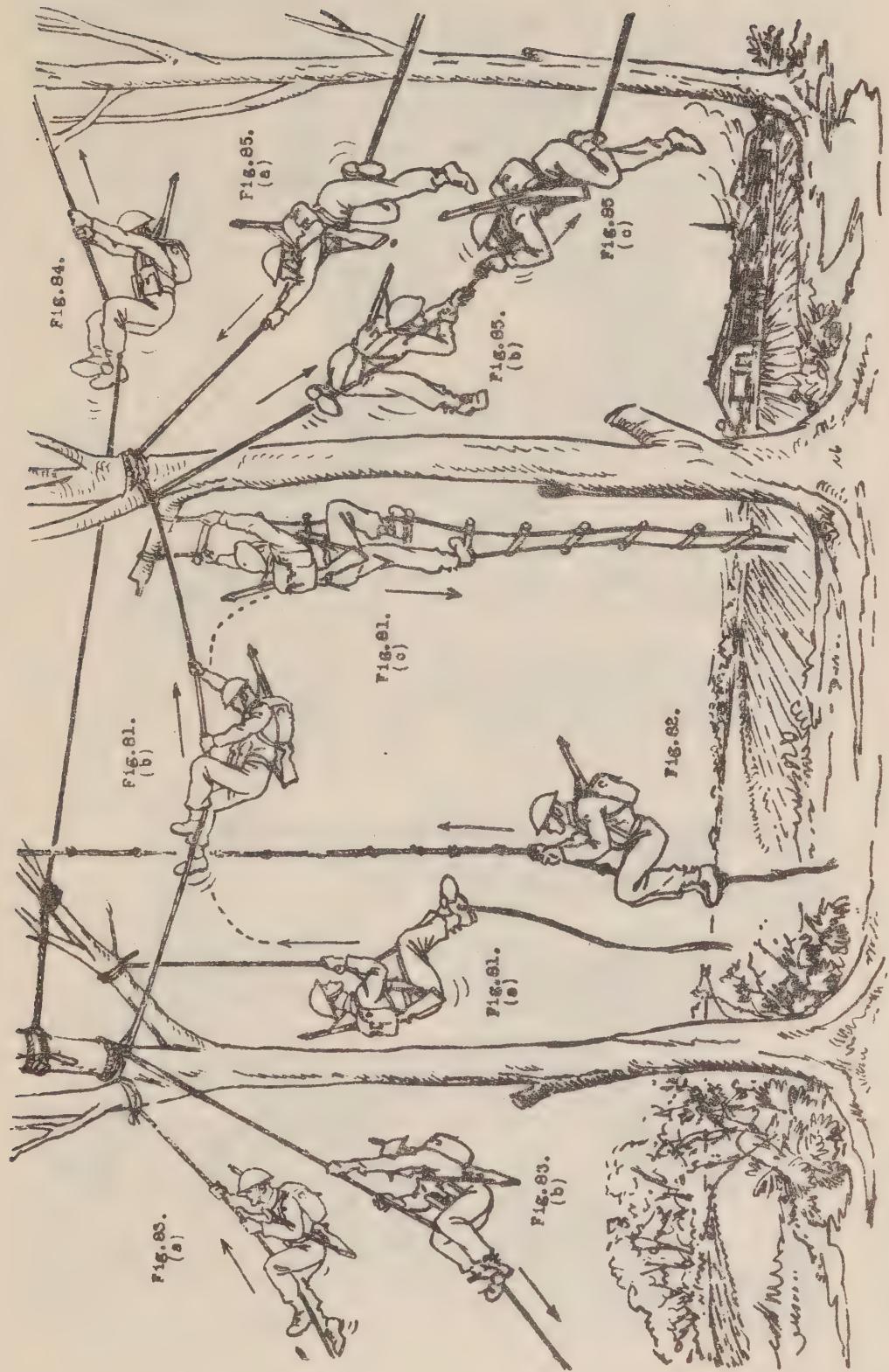
- (b) *Climbing (vertical, inclined or horizontal ropes ; rope ladders ; scramble nets ; trees ; drain pipes ; ladders ; rocks, or rope bridges).* (See Pages 19, 21, 22 and 23.)

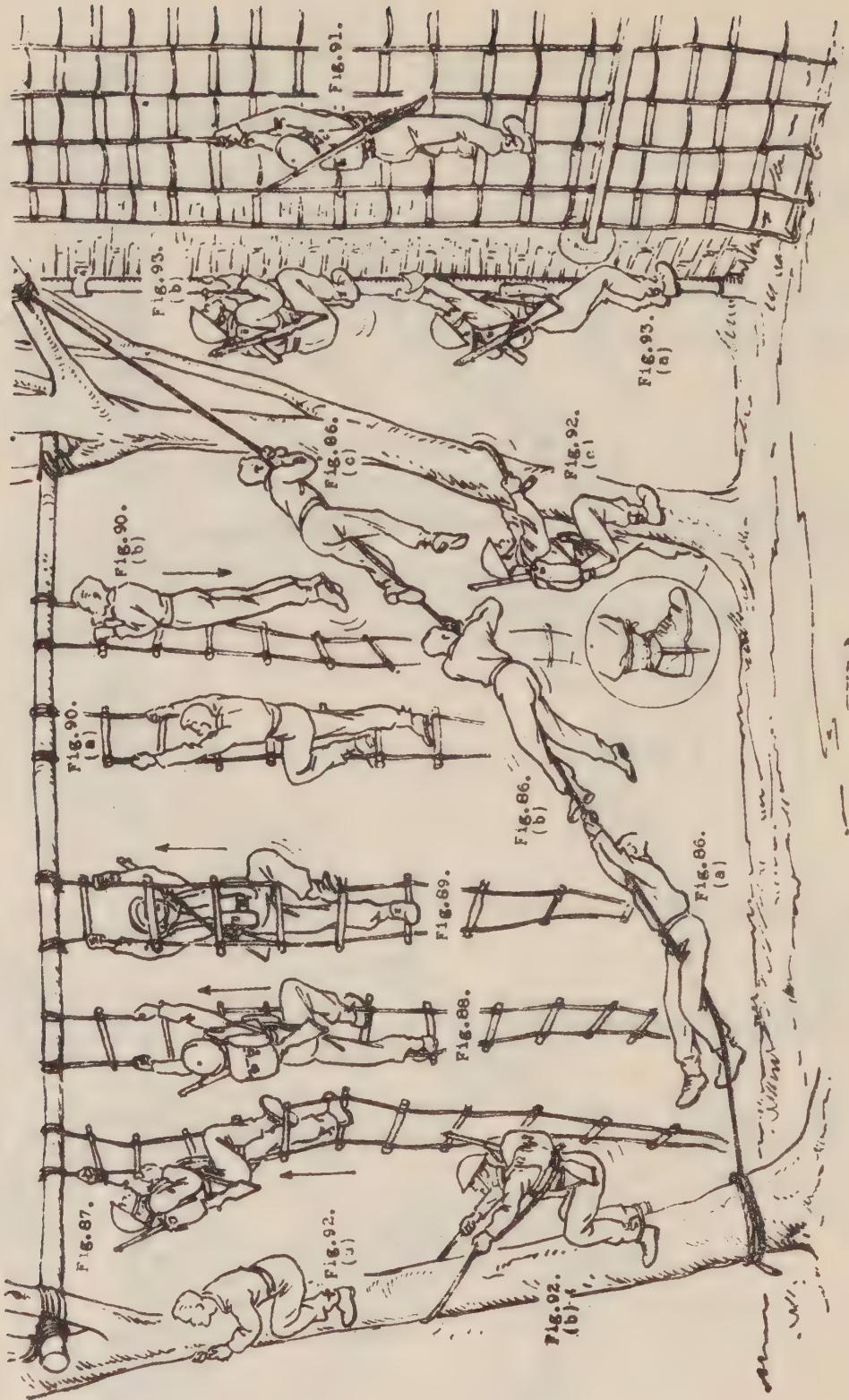
 - (i) Vertical rope, using arms and legs (Fig 76).
 - (ii) Vertical rope, using arms and legs for the ascent, but arms only for the descent (Fig 77).
 - (iii) Vertical rope, using arms only for both ascent and descent (Fig 78).
 - (iv) Vertical rope, stirrup method (Fig 79).
 - (v) Vertical rope, twice, to a height of 12-15 feet, using arms and legs.
 - (vi) Vertical rope, to a height of 25-30 feet, with or without the use of the legs.
 - (vii) Two parallel vertical ropes, using arms only (Fig 80).

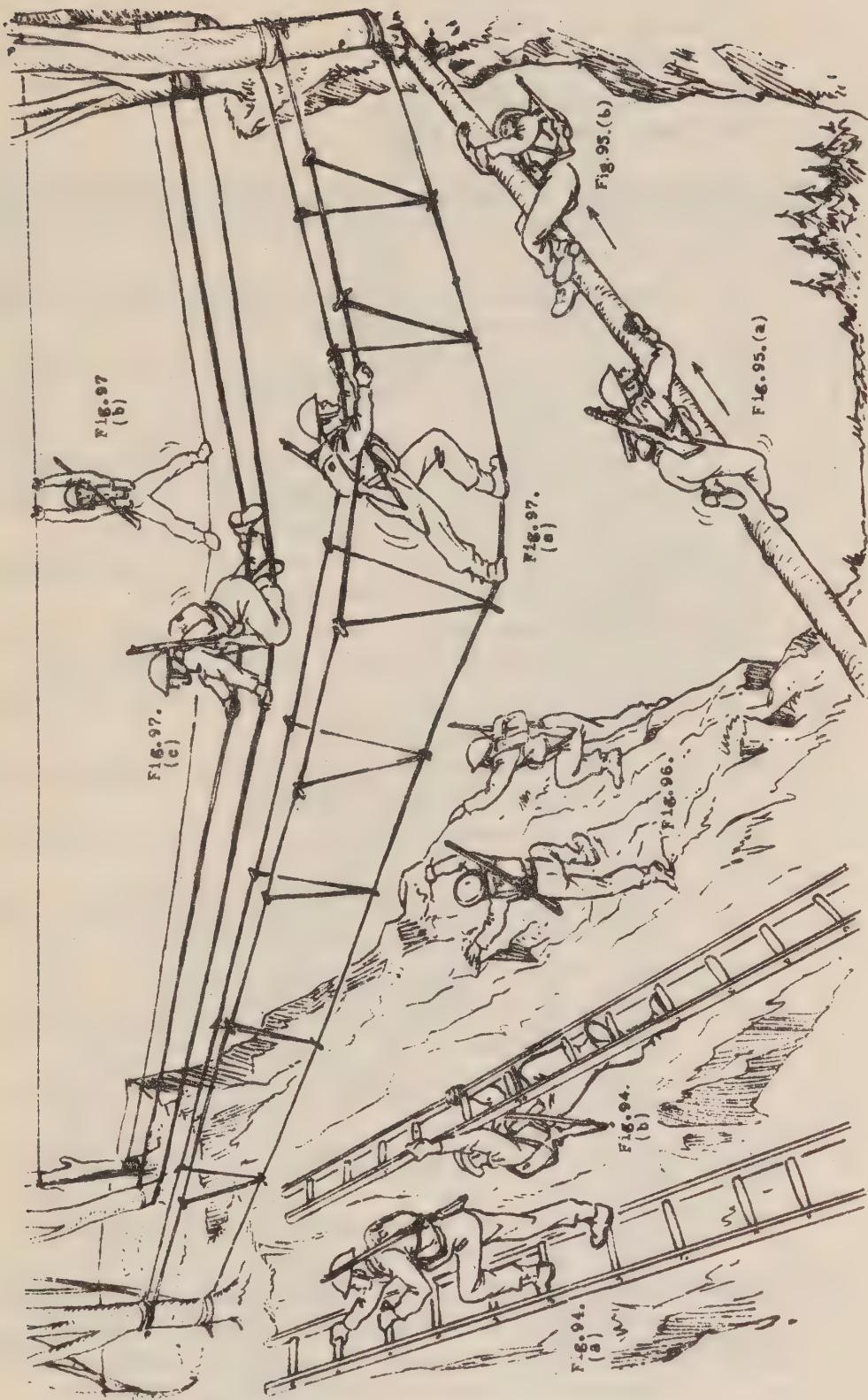




- (viii) Climbing vertical rope, traversing horizontal rope and descending vertical rope, or rope ladder (Fig 81).
- (ix) Knotted vertical rope, or toggle ropes (Fig 82).
- (x) Inclined or horizontal rope, hanging underneath, ascending or traversing, using "sloth walk" (Fig 83 (a)). Hanging underneath, descending inclined rope feet first (Fig 83 (b)).
- (xi) Inclined or horizontal rope, hanging underneath, using arms and legs, but keeping legs on the rope (Fig 84).
- (xii) Inclined or horizontal rope, lying on top, ascending or traversing, using arms and one leg (Fig 85 (a)). Descending inclined rope head first (Fig 85 (b)). Descending feet first (Fig 85 (c)).
- (xiii) Inclined or horizontal rope, changing from hanging underneath to lying on top (Fig 86).
- (xiv) Rope ladder, up the side (Fig 87).
- (xv) Rope ladder, up the front (Fig 88).
- (xvi) Rope ladder, up the front, one foot on far side of rope (Fig 89).
- (xvii) Rope ladder, up the front, descending using arms only (Fig 90).
- (xviii) Scramble net (Fig 91).
- (xix) Tree climbing (Figs. 92 (a), 92 (b), 92 (c)).
- (xx) Drain pipe (Fig 93).
- (xxi) Inclined ladder (Fig 94).
- (xxii) Inclined plank or log (Fig 95).
- (xxiii) Preparatory rock climbing (Fig 96).
- (xxiv) Rope bridges (Figs. 97 (a), 97 (b), 97 (c)).





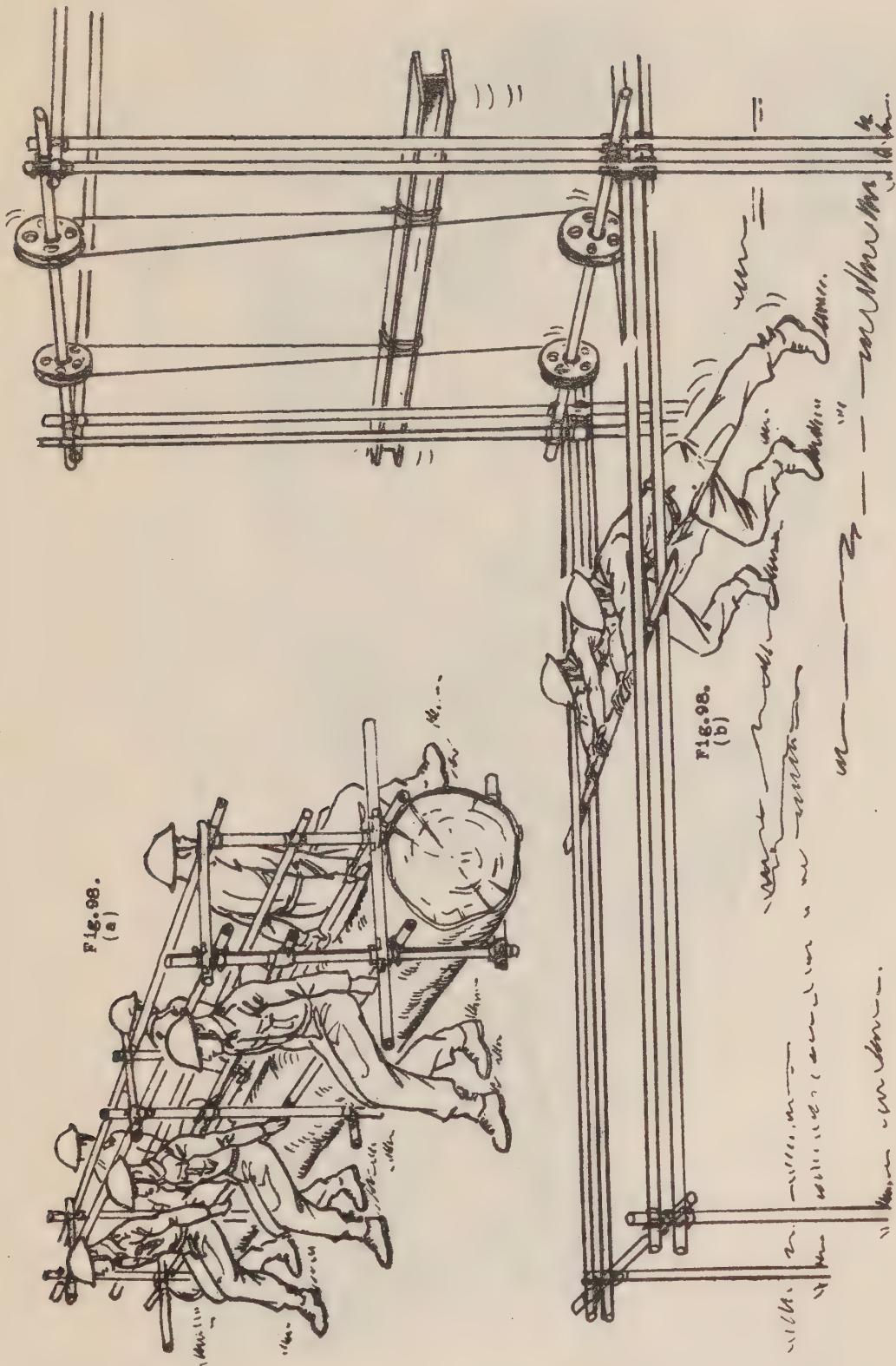


(c) *Gun and vehicle manhandling.* (See Pages 25 to 31.)

- (i) Preparatory strengthening apparatus (Fig 98).
- (ii) 6-pr gun (Fig 99).
- (iii) 17-pr gun (Fig 100).
- (iv) 25-pr gun (Fig 101).
- (v) Bofors gun (Fig 102).
- (vi) Vehicle (Fig 103).
- (vii) Jeep lifting (Fig 104).

(d) *Heaving exercises (tubular scaffolding; improvised beam and horizontal ladder; benches and stick, in threes, or monkey rack).* (See Pages 32 to 36.)

- (i) (Hanging, under grasp) Arm bending until eyes are level with top of apparatus (Fig 105).
- (ii) (Hanging, under grasp) Arm bending to bring chest as near as possible to apparatus (Fig 106).
- (iii) (Hanging, alternate grasp) Arm bending to bring chest as near as possible to apparatus (Fig 107).
- (iv) (Hanging, over grasp) Arm bending until top of head touches under side of apparatus (Fig 108).
- (v) (Hanging, over grasp) Arm bending to bring chest as near as possible to apparatus (Fig 109).
- (vi) (Hanging, over grasp) Arm bending until back of head touches front side of apparatus (Fig 110).
- (vii) (Hanging, over grasp) Arm travelling sideways without a swing (Fig 111).
- (viii) (Hanging, over grasp) Arm travelling sideways with leg swinging sideways (Fig 112).
- (ix) (Hanging, inward grasp) Arm travelling backward (Fig 113).
- (x) (Hanging, over grasp) Arm travelling sideways with arm bending after each step (Fig 114).
- (xi) Rotary arm travelling (Fig 115).
- (xii) Rotary arm travelling with arm bending after each step (Fig 116).
- (xiii) (Hanging, inward grasp) Arm travelling backward (Fig 117).
- (xiv) (Hanging, inward grasp) Arm travelling forward (Fig 118).
- (xv) (Hanging, inward grasp) Arm jumping backward or forward (Fig 119).
- (xvi) (Hanging, inward grasp) Arm jumping forward with leg swinging forward and backward (Fig 120).
- (xvii) (Hanging, inward grasp on rungs) Arm travelling sideways with leg swinging sideways (Fig 121).
- (xviii) (Hanging, over grasp on two rungs) Arm travelling forward (Fig 122).
- (xix) (Hanging, inward grasp, one hand turned, on rungs) Arm travelling with a turn (Fig 123).



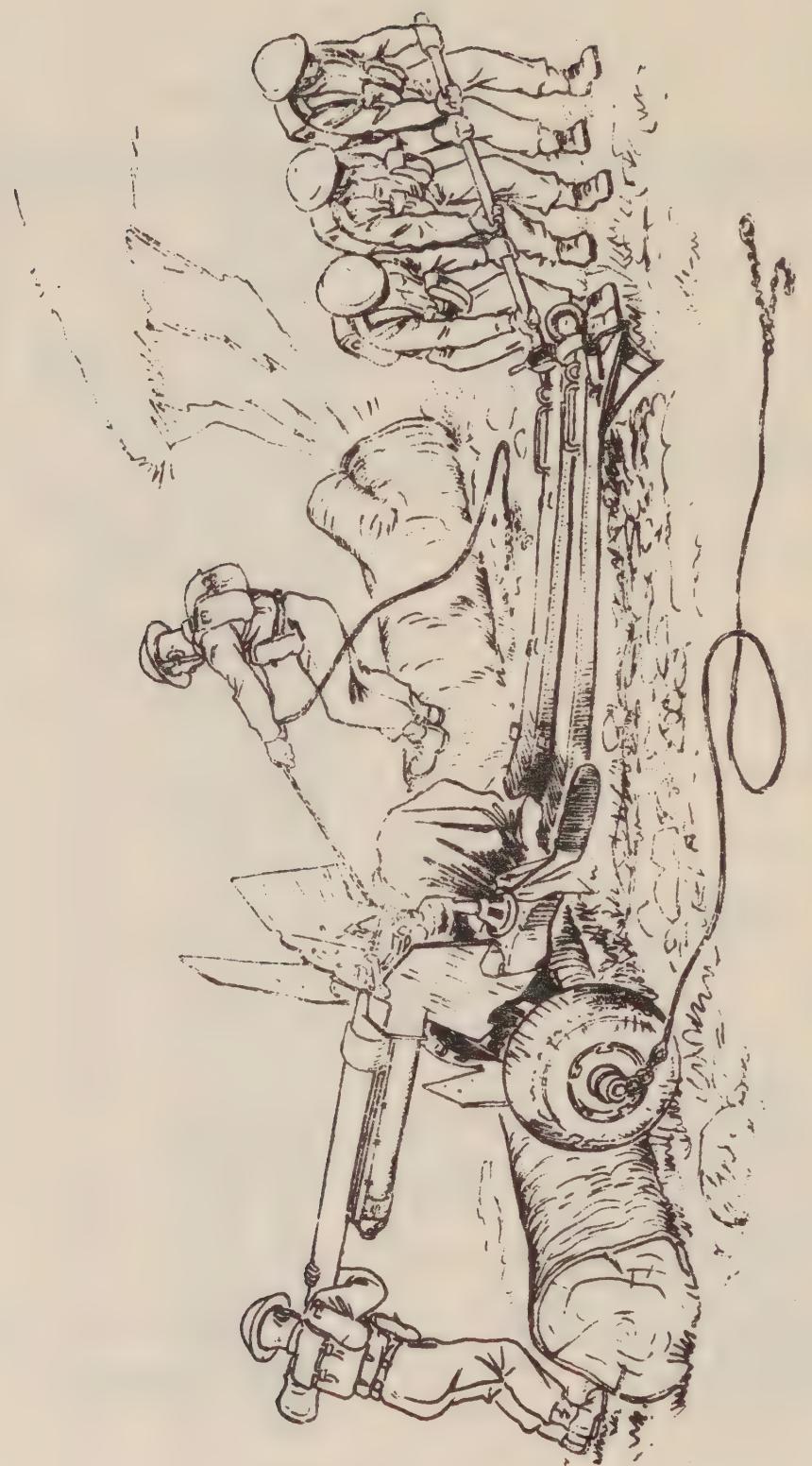


FIG. 99

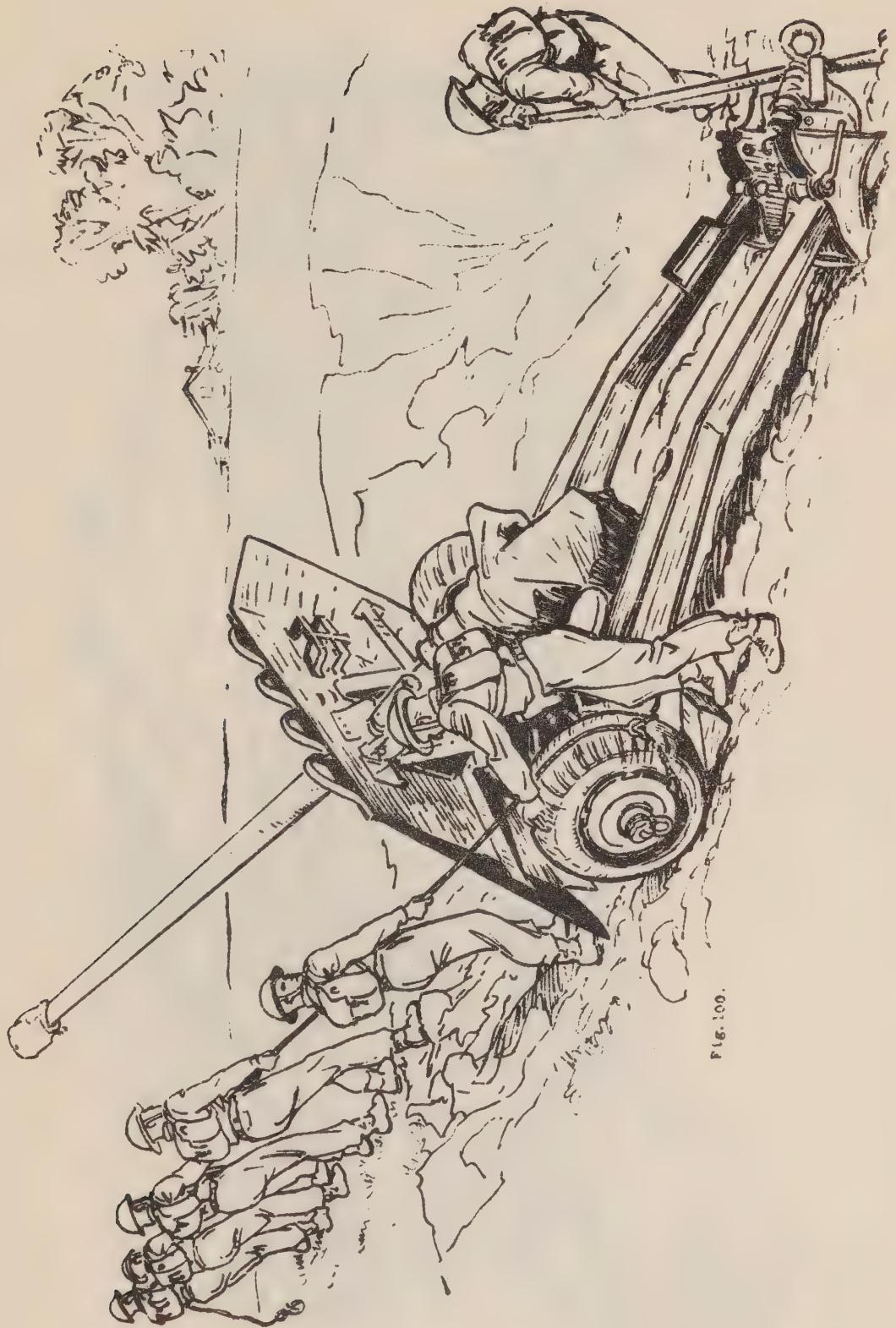
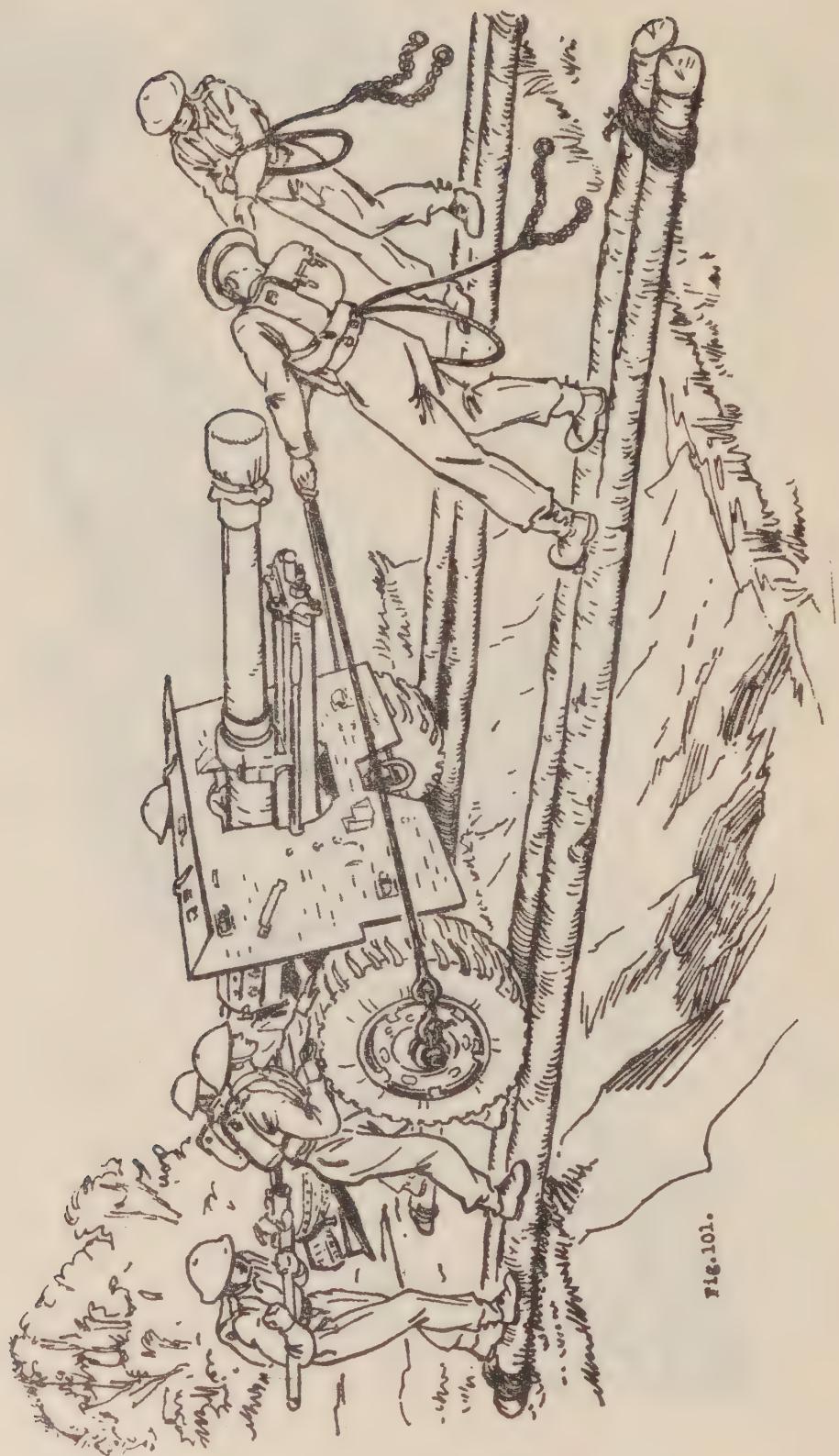


FIG. 100.



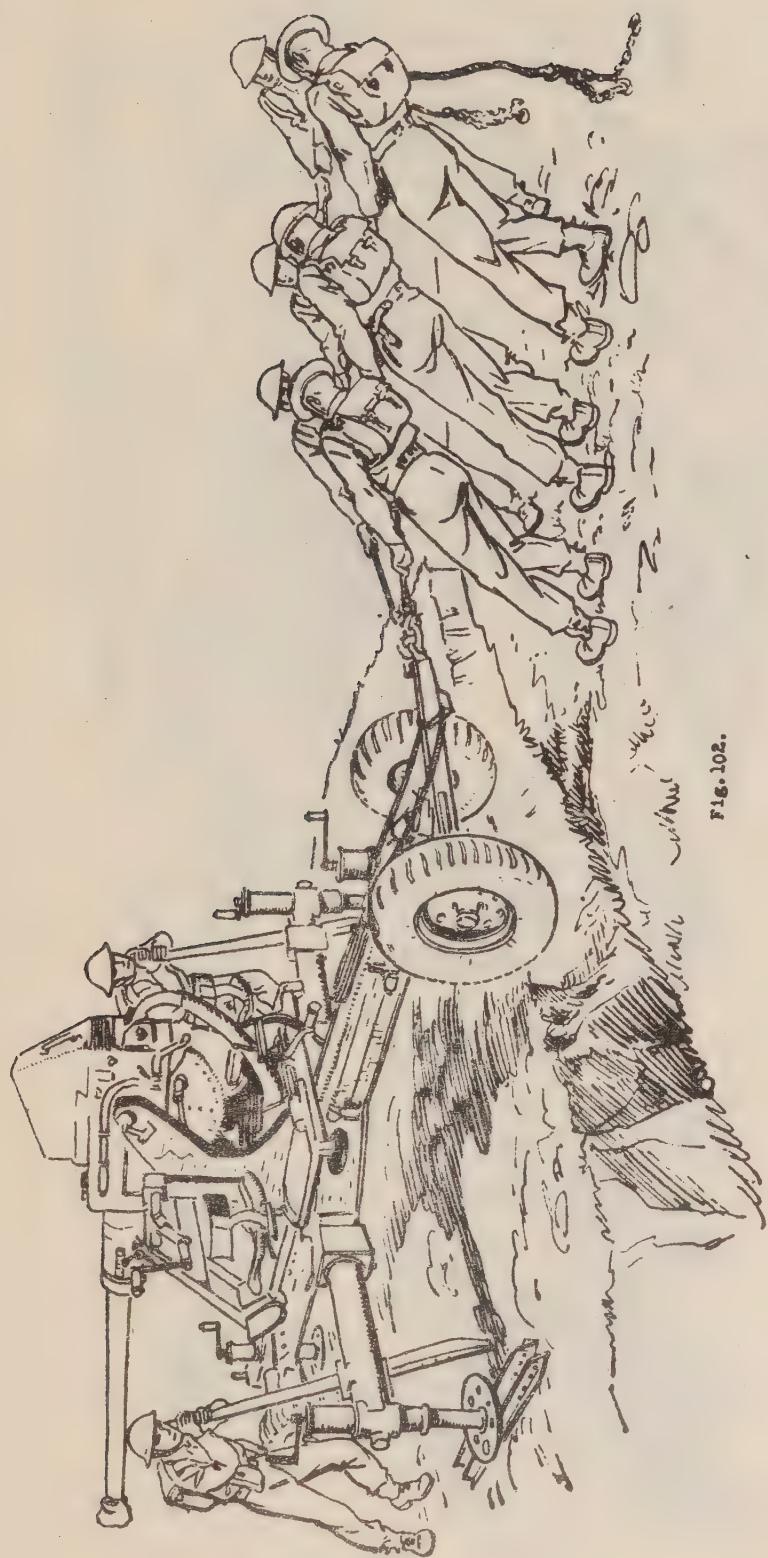


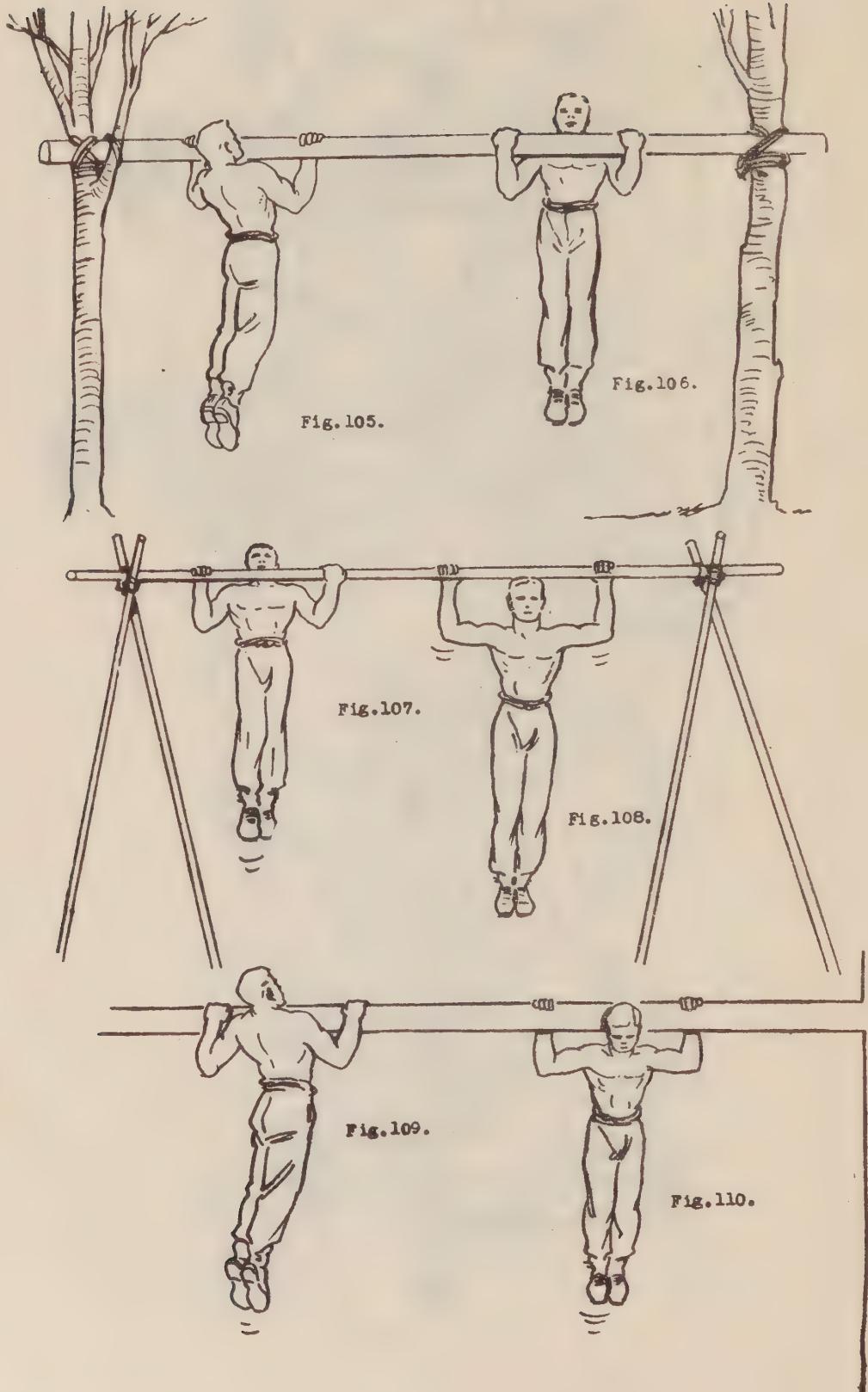
FIG. 102.



FIG. 103.



FIG. 104.



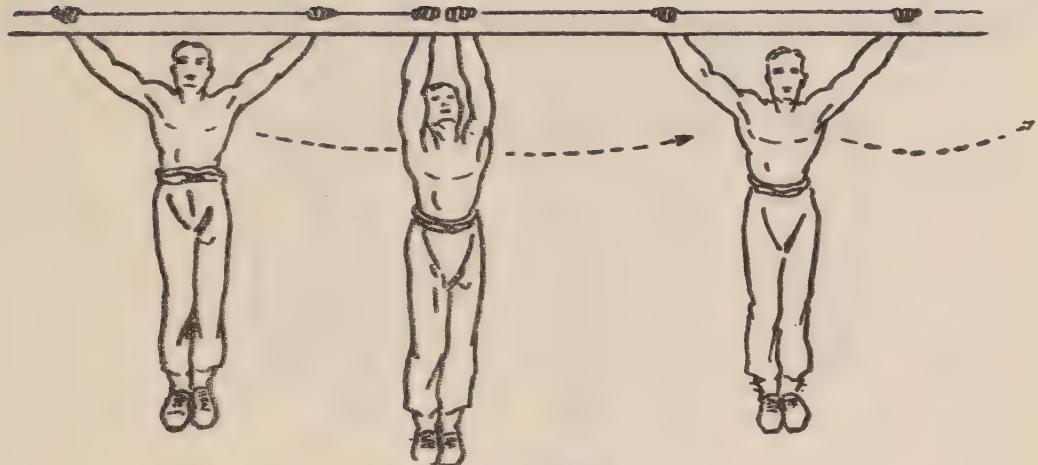


Fig. 111.

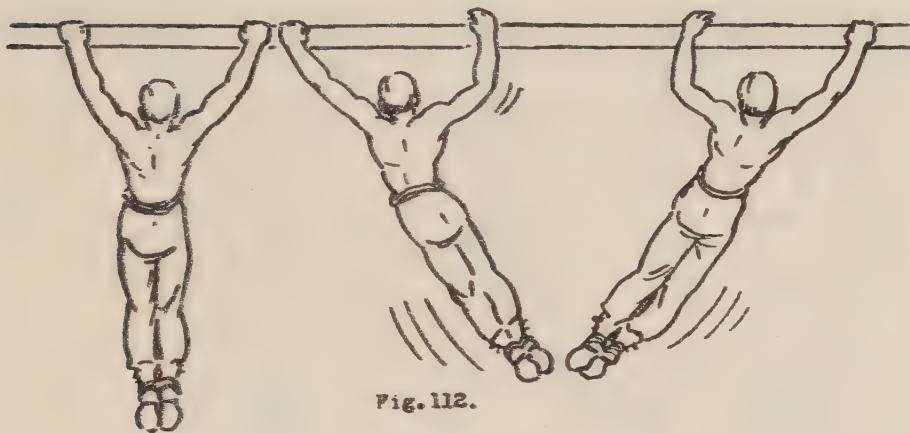


Fig. 112.

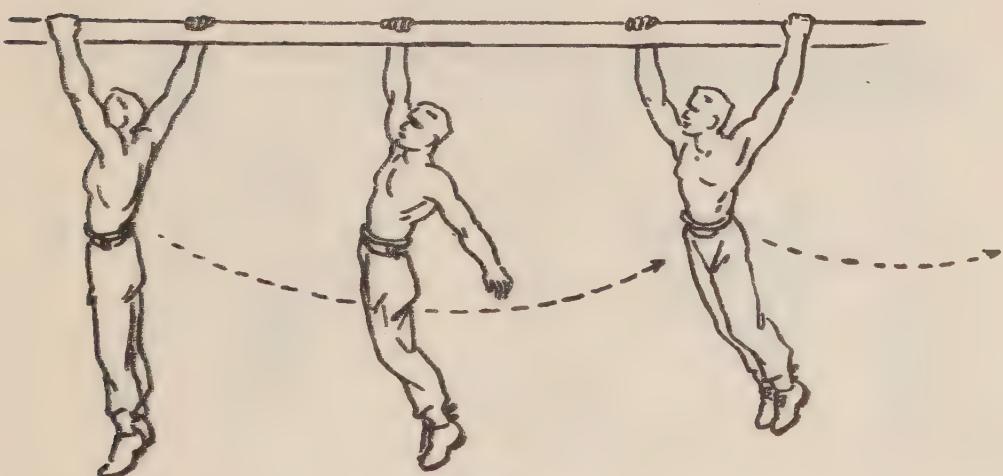
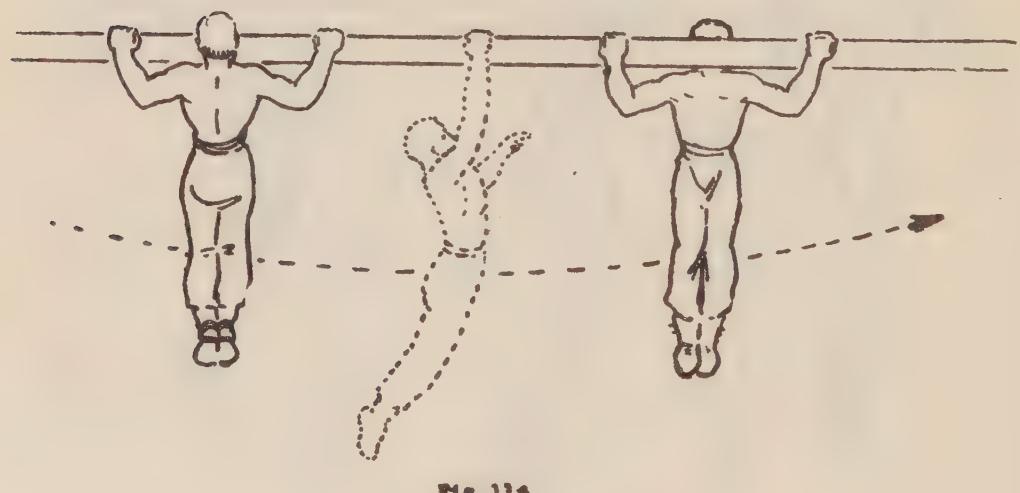
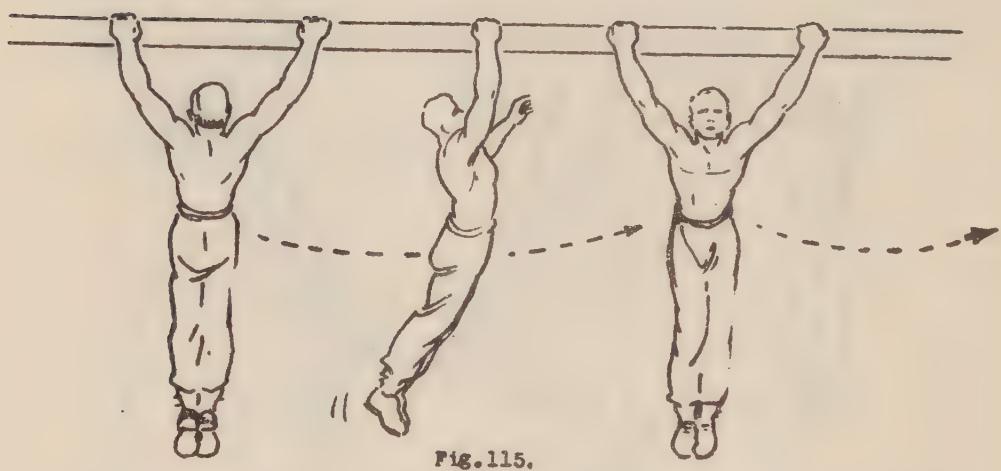
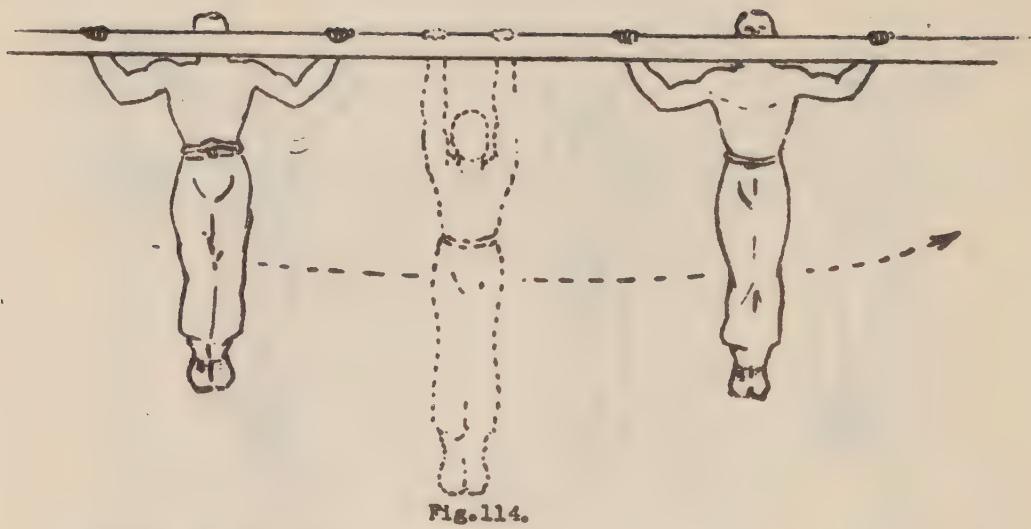


Fig. 113.



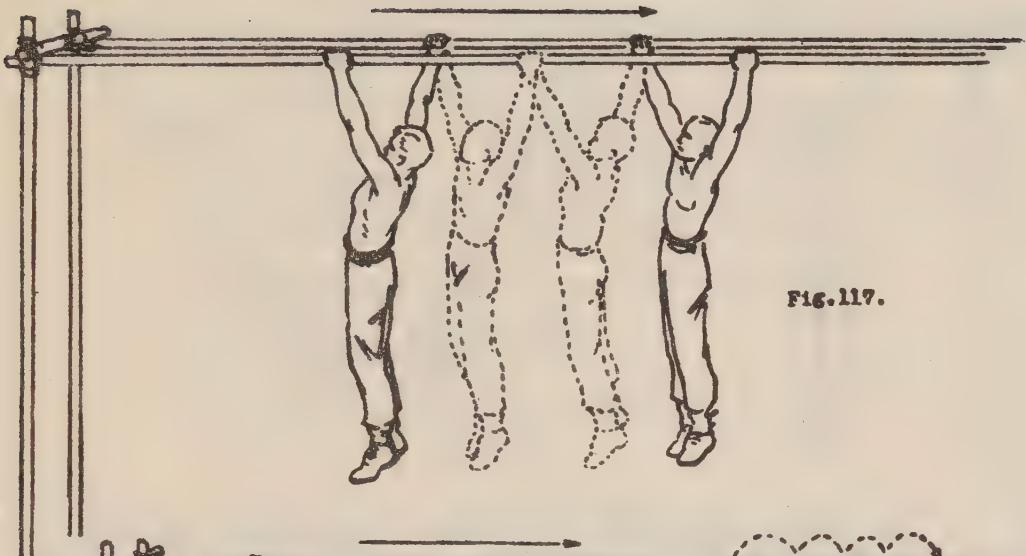


Fig. 117.

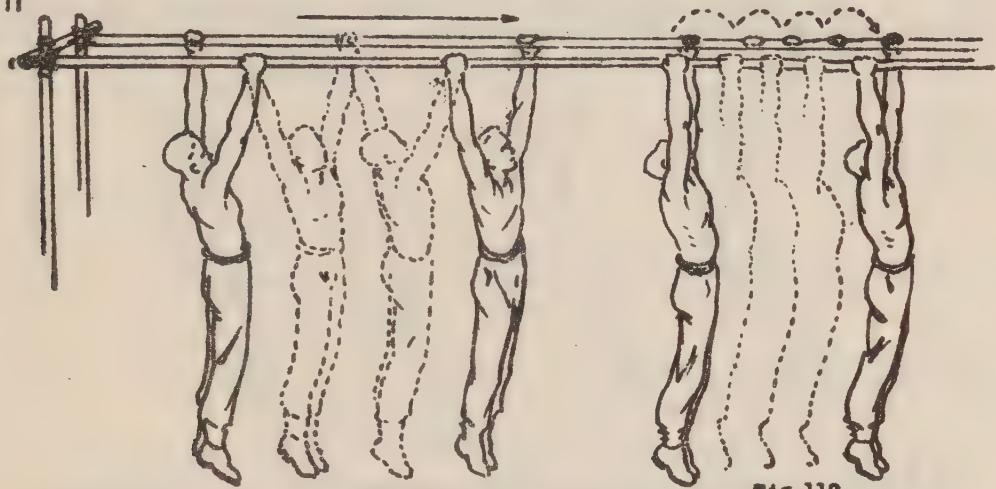


Fig. 118.

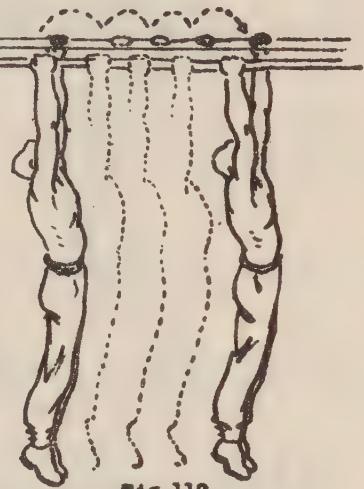


Fig. 119.

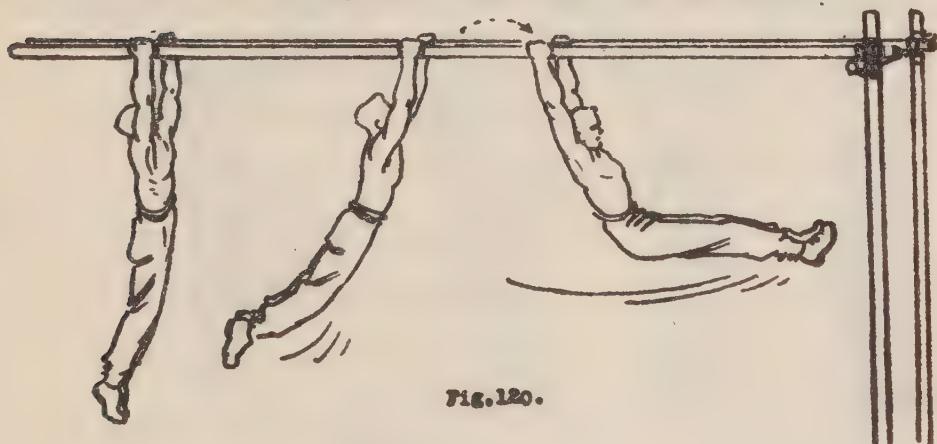
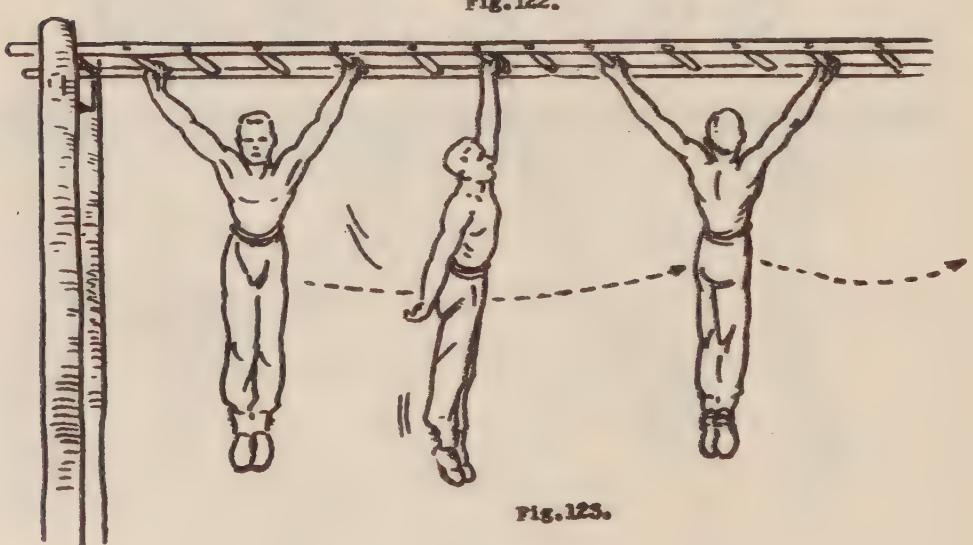
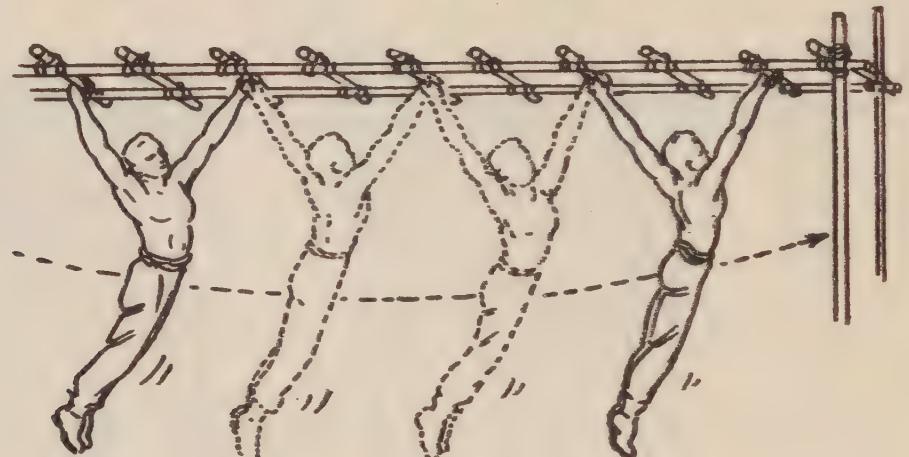
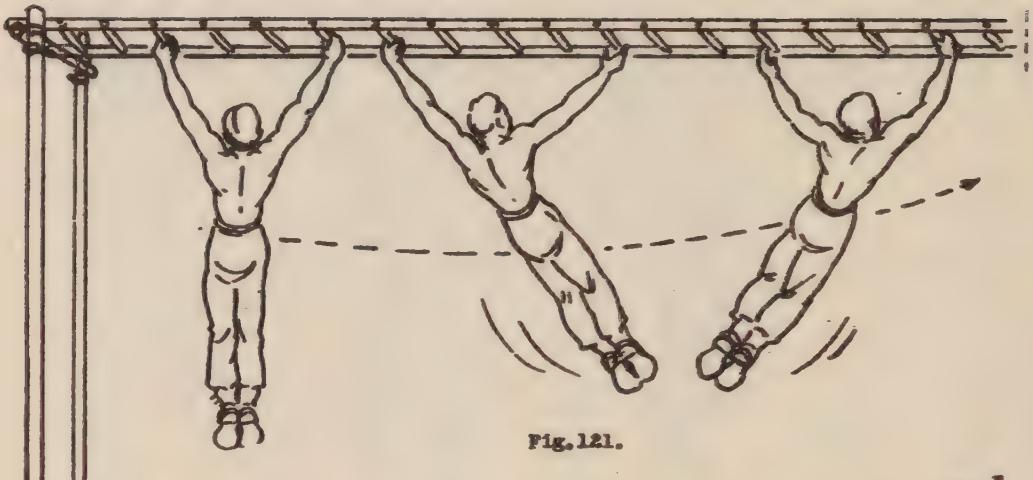


Fig. 120.



(e) *Lifting and carrying.*

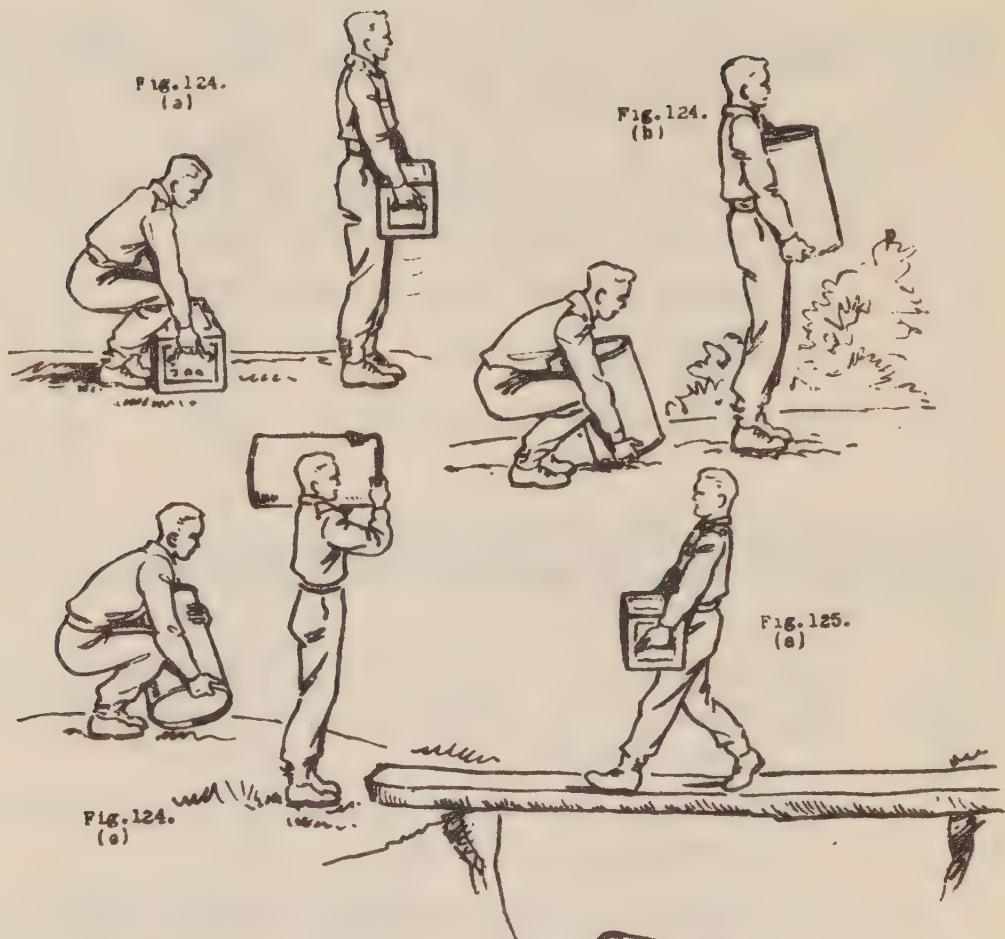
Dead weights. (See Pages 38, 39 and 40.)

- (i) Lifting and carrying articles of unit equipment of various weights, sizes and shapes (eg, ammunition boxes, shells and oil drums) (Fig 124).
- (ii) As (i), but carrying articles along or over improvised obstacles (Fig 125).
- (iii) Lifting and carrying in twos, threes or fours heavy articles of unit equipment (eg, 4·2 in mortar, oil drums, crates and bales) (Fig 126).
- (iv) Passing and carrying relays (Fig 127).
- (v) Collier's lift (Fig 128).
- (vi) Lifting heavy logs (Fig 129).

Live weights. (See Pages 41 and 42.)

- (i) Two and four-handed methods of lifting and carrying (Fig 130).
- (ii) Fore and aft method of lifting and carrying (Fig 131).
- (iii) Fireman's lift, passing one arm between subject's legs (Fig 132).
- (iv) Fireman's lift, passing one arm round both of subject's legs (Fig 133).
- (v) Fireman's lift from standing position, subject to be carried progressively 50 yds in 30 secs, 100 yds in 60 secs and 200 yds in 120 secs.
- (vi) Pick-a-back method of carrying (Fig 134).
- (vii) Shoulder lift (Fig 135).
- (viii) Human stretcher (Fig 136).
- (ix) Carrying man in arms (Fig 137).
- (x) Neck drag (Fig 138).
- (xi) Crouch carry (Fig 139).
- (xii) Crawl carry (Fig 140).
- (xiii) Hands and knees crawl, carrying man on back (Fig 141).
- (xiv) Leopard crawl, carrying man on back (Fig 142).

NOTE.—Most of the above should be practised over or along obstacles.



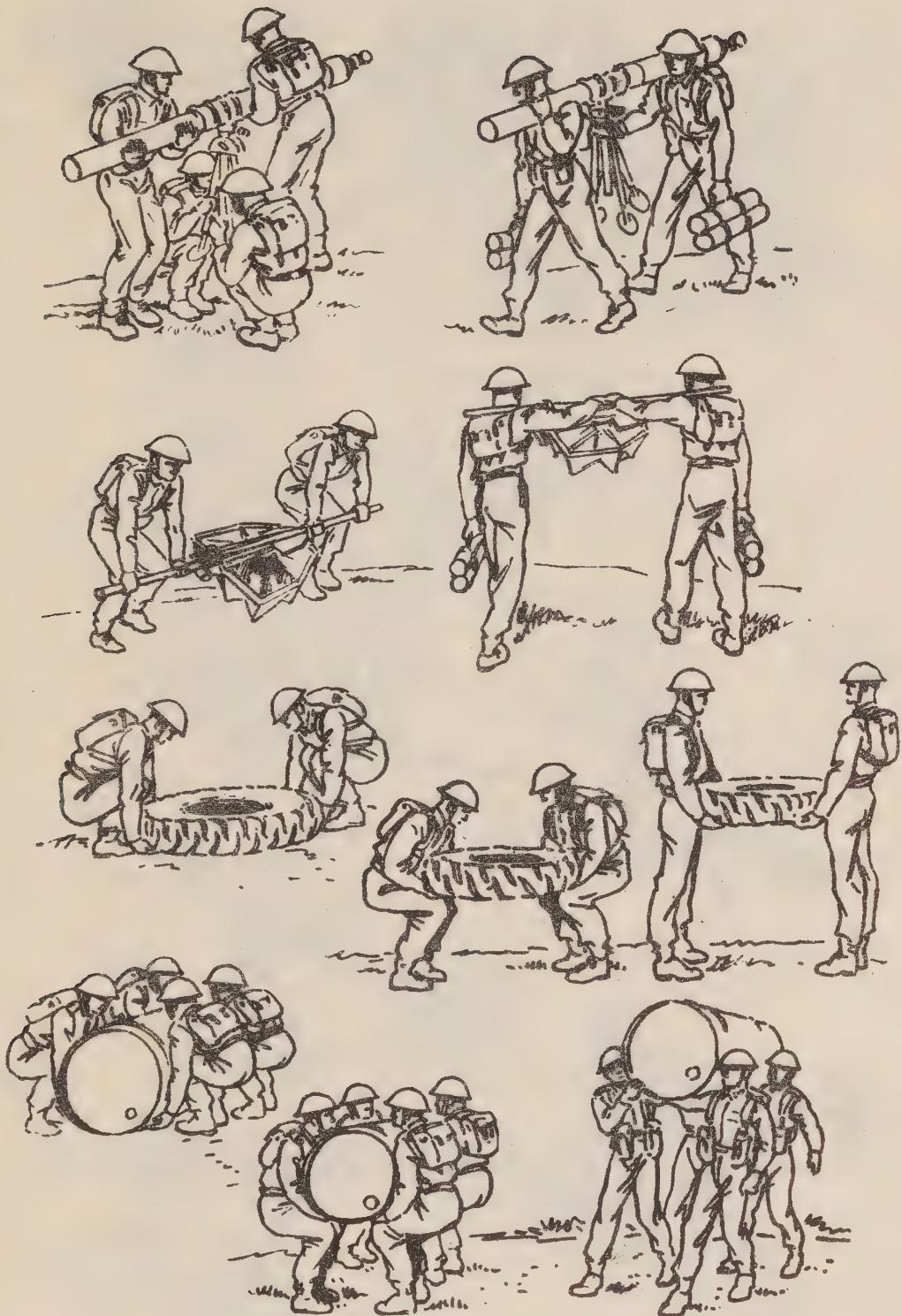


FIG. 126.



Fig. 127. (a)

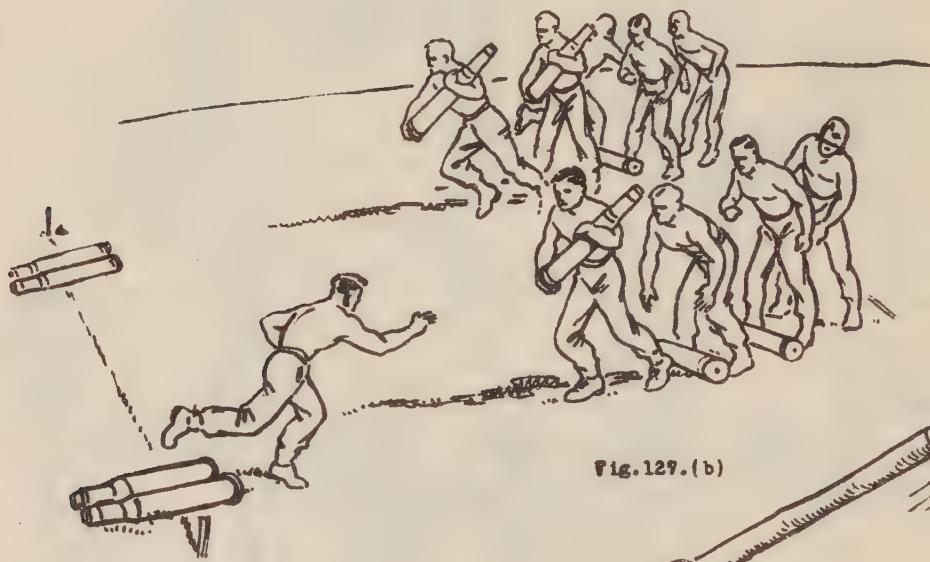


Fig. 127. (b)

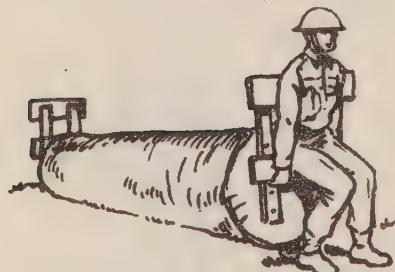
Fig. 129.
(a)

Fig. 128.

Fig. 129.
(b)

Fig. 130.
(a)Fig. 130.
(b)

Fig. 131.



Fig. 132.



Fig. 134.



Fig. 133.



Fig. 135.

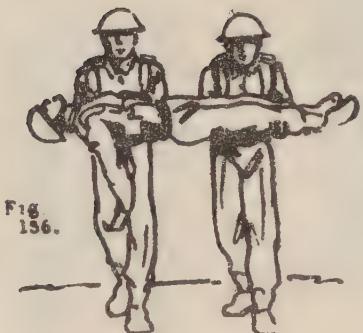


Fig. 136.



Fig. 137.



Fig. 138.



Fig. 139.



Fig. 140.



Fig. 141.

Fig. 142.



(f) *Log exercises (Teams of six or eight men, of approximately the same height, to each log. Weight of logs 120 lb-160 lb respectively).*

Arm (see Pages 44 to 47)

- (i) (Astride, log on one shoulder) Arm stretching upward and bending, placing log on opposite shoulder (Fig 143).
- (ii) (Astride, log at one side of body) Arm swinging sideways-upward and overhead from side to side (Fig 144).
- (iii) (Astride, arms upward, log above head) Quick passing forward, last man running to front of team as soon as he has passed log forward (Fig 145).
- (iv) (Back lying, knees bent, log on chest) Arm stretching forward (Fig 146).
- (v) (Astride, log chest-height on palms of hands) Arm stretching forward (Fig 147).
- (vi) (Astride, trunk forward, alternate grasp) Arm bending lifting log to chest (Fig 148).
- (vii) (Astride, one log on each shoulder) Alternate arm stretching upward (Fig 149).
- (viii) (Astride, one log on each shoulder) Arm stretching upward (Fig 150).
- (ix) (Astride, one log at each side of body) Alternate arm bending to place log on shoulder (Fig 151).
- (x) (Astride, one log at each side of body) Alternate arm raising sideways (Fig 152).
- (xi) (Astride, one log at each side of body) Alternate arm swinging forward-backward (Fig 153).
- (xii) (Astride, one log at each side of body) Arm swinging forward-backward (Fig 154).

Leg and Arm (see Page 47)

- (xiii) (Astride, log on one shoulder, knees slightly bent) Quick knee stretching with arm stretching upward and bending placing log on opposite shoulder (Fig 155).
- (xiv) (Astride, log on one shoulder, knees slightly bent) Quick knee stretching with vertical high throw, catching with both hands as knees are bent (Fig 156).
- (xv) (Two ranks facing, one foot forward, log in crook of arms) Throwing forward-upward to opposite rank with a preliminary knee bending and quick stretching (Fig 157).

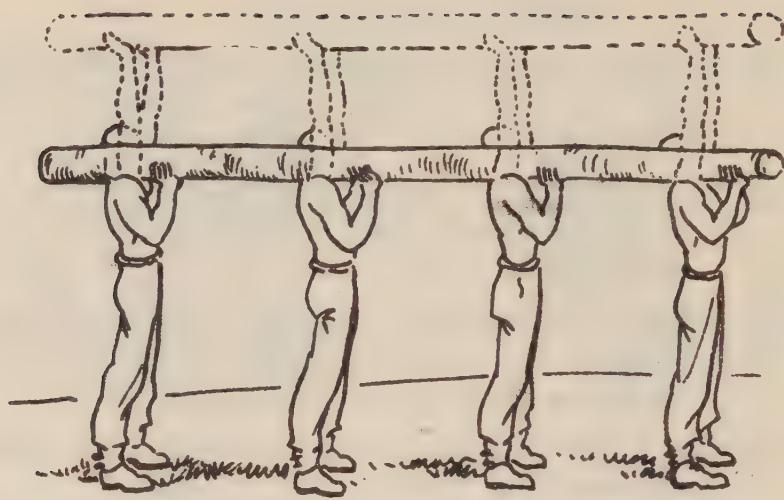


Fig. 143.

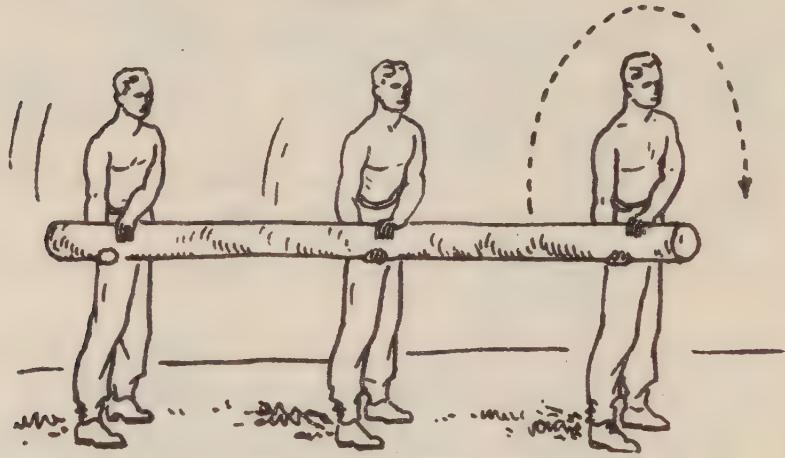


Fig. 144.

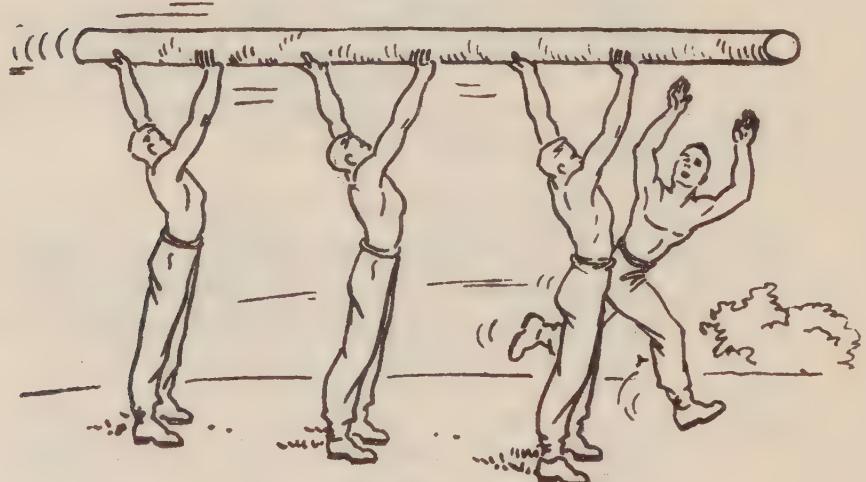


Fig. 145.

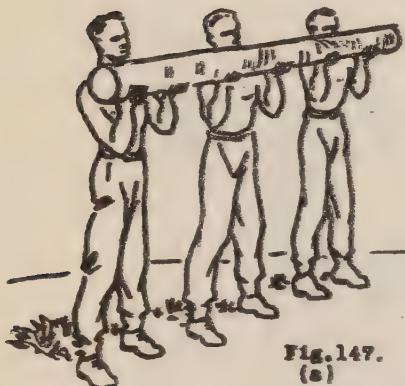
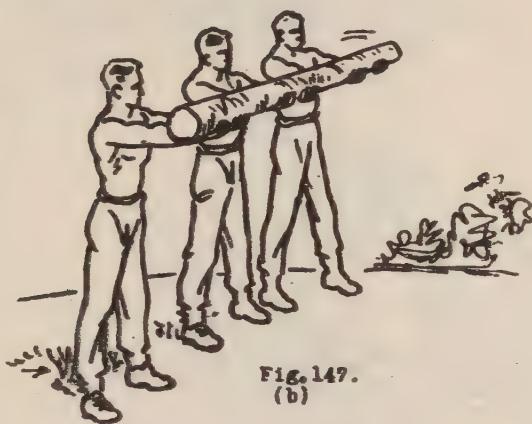
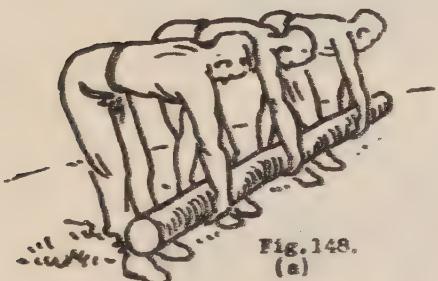
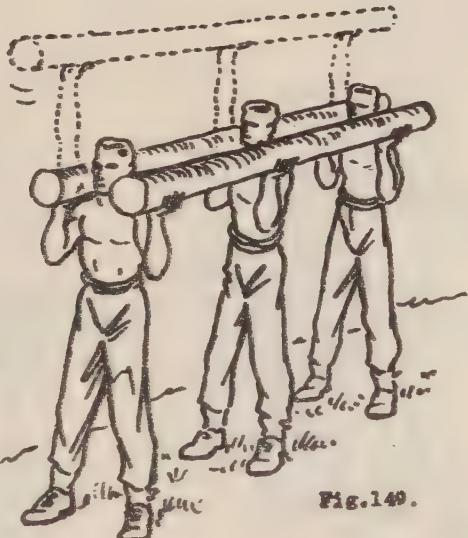
Fig. 146.
(a)Fig. 146.
(b)Fig. 147.
(a)Fig. 147.
(b)Fig. 148.
(a)Fig. 148.
(b)

Fig. 149.

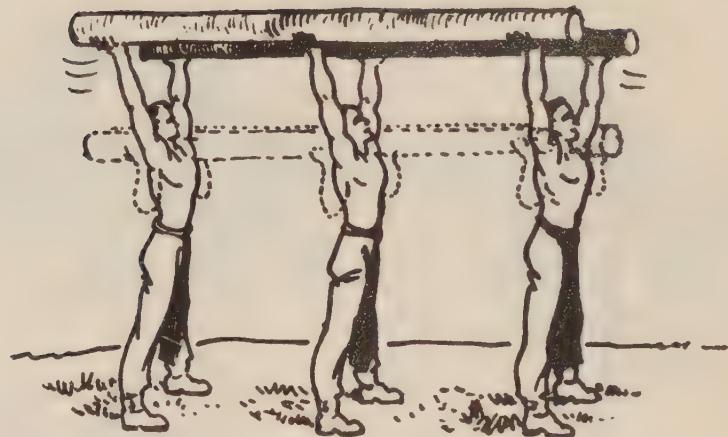


Fig. 150.

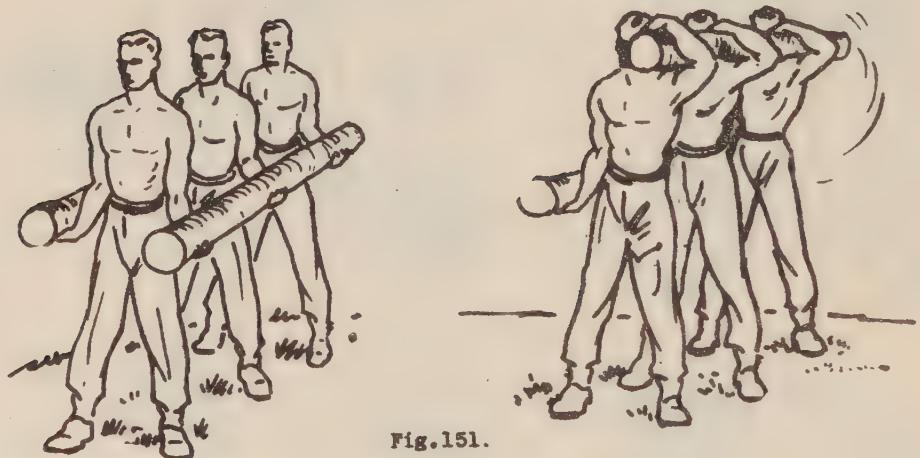


Fig. 151.

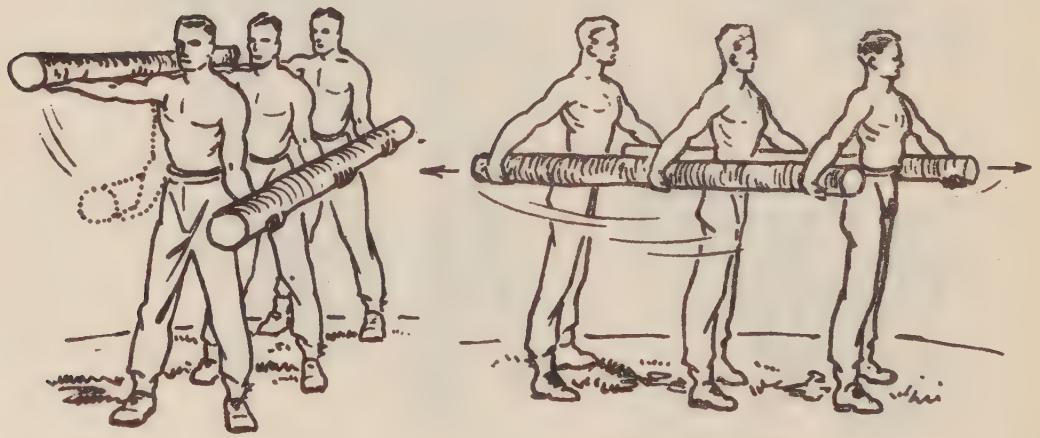


Fig. 152.

Fig. 153.

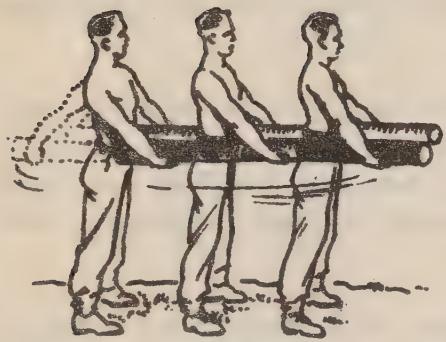


Fig. 154.

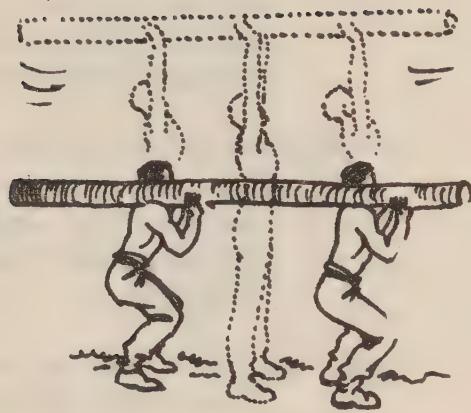


Fig. 155.

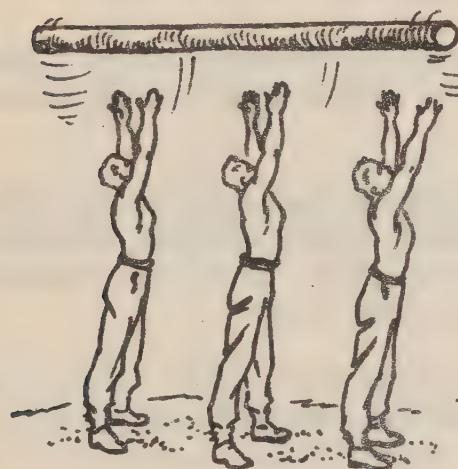


Fig. 156.

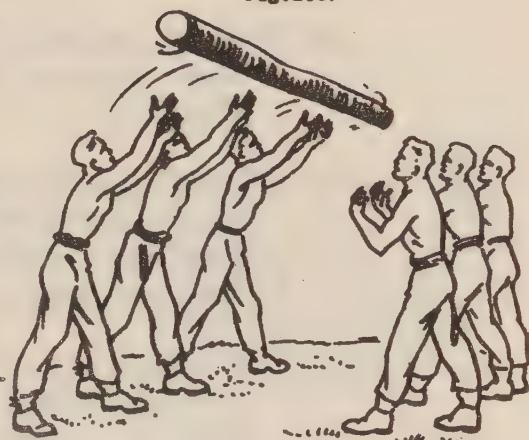


Fig. 157.



Fig. 158.

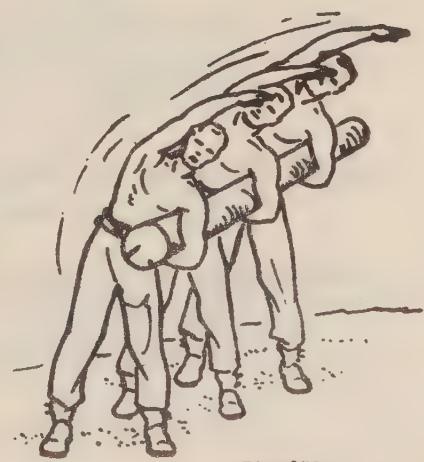


Fig. 159.

Trunk (see Pages 47, 49 and 50)

- (xvi) (Astride, log under one arm) Trunk bending to opposite side with one arm reaching downward (Fig 158).
- (xvii) (Astride, log under one arm) Trunk bending sideways towards log with opposite arm swinging sideways-upward (Fig 159).
- (xviii) (Astride, log under one arm) Trunk bending away from log with one arm reaching downward (1-4), followed by trunk bending towards log with opposite arm swinging sideways-upward (5-8) (Fig 160).
- (xix) (Astride, one log under each arm) Trunk bending from side to side (Fig 161).
- (xx) (Astride, one log at each side of body) Trunk turning with alternate arm swinging forward-backward (Fig 162).
- (xxi) (Sitting, alternate sides, facing opposite directions, log in crook of arms) Trunk bending downward (lowering backward) and lowering backward (bending downward) (Fig 163).
- (xxii) (Back lying, log in front of chest) One leg raising to vertical position, left and right, with arm stretching forward. Later, raising both legs with arm stretching forward (Fig 164).
- (xxiii) (Back lying, knees bent, log in crook of arms) Trunk raising to vertical position with leg stretching (Fig 165).
- (xxiv) (Astride, log above head, arms straight) Passing log backward slowly (Fig 166).
- (xxv) (One foot forward, facing, alternate sides of log, one hand under grasp, one hand over grasp) Log circling forward and backward (Fig 167).

Heaving (see Page 50)

- (xxvi) Climbing vertical log (Fig 168).
- (xxvii) Climbing inclined log (Fig 169).

Balance (see Page 51)

- (xxviii) Head wrestle (Fig 170).



Fig. 160.

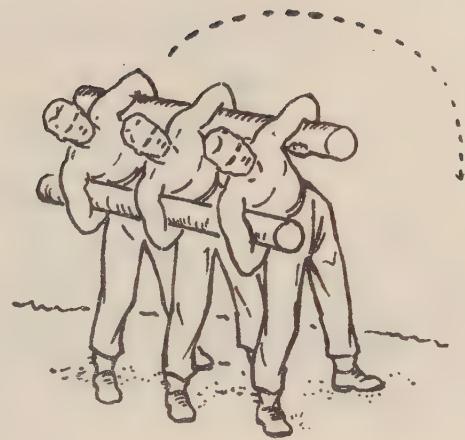


Fig. 161.

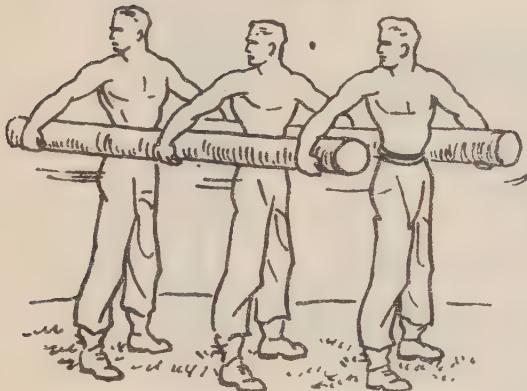


Fig. 162.



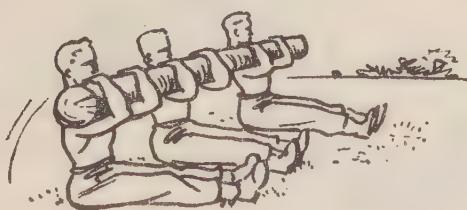
Fig. 163.



Fig. 164.



Fig. 165.



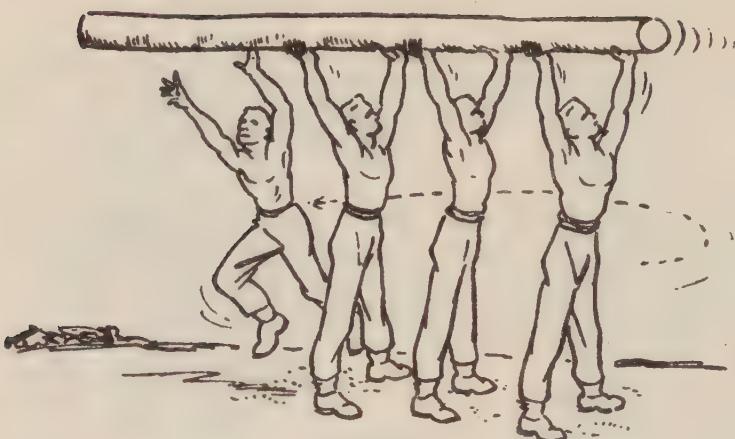


Fig. 166.

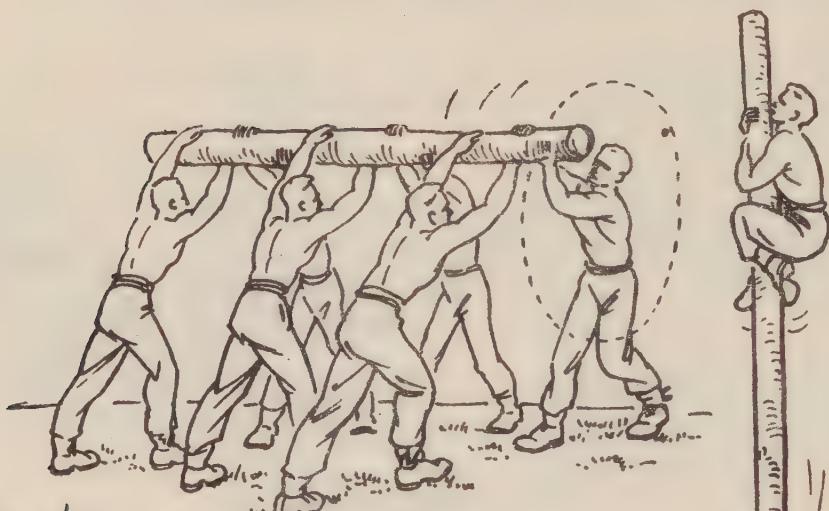


Fig. 167.

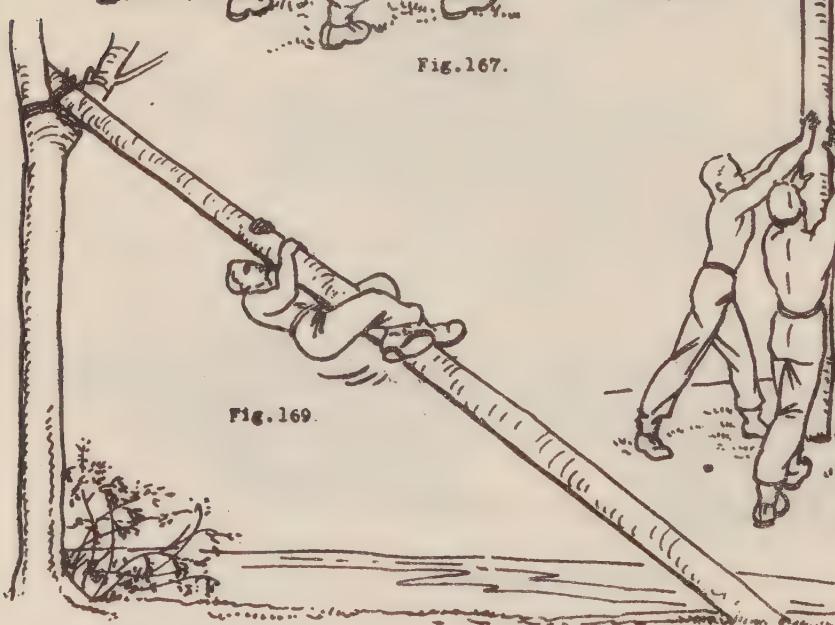


Fig. 169.

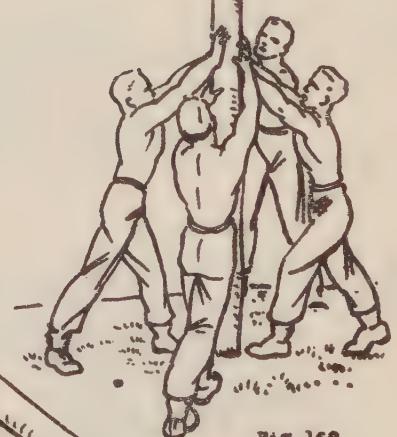


Fig. 168.

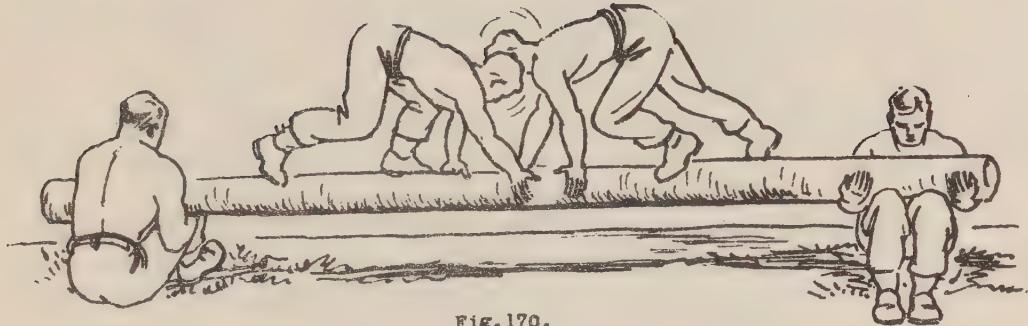


Fig. 170.

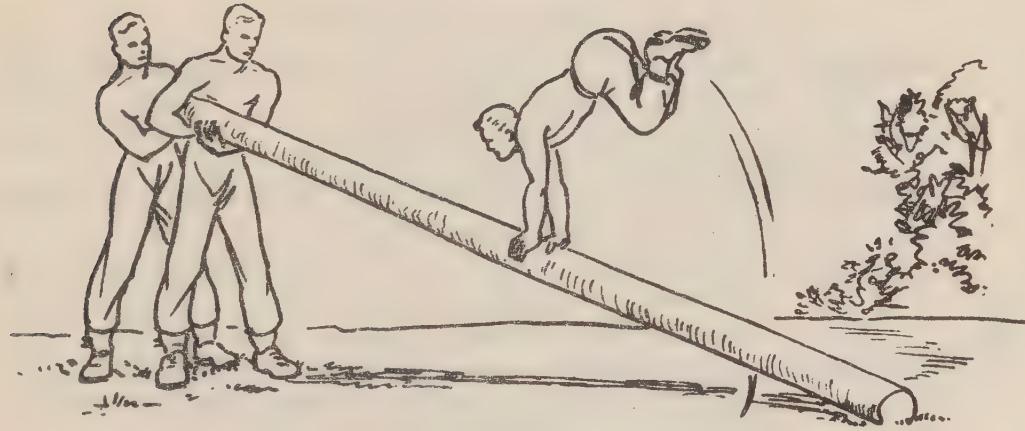


Fig. 171.

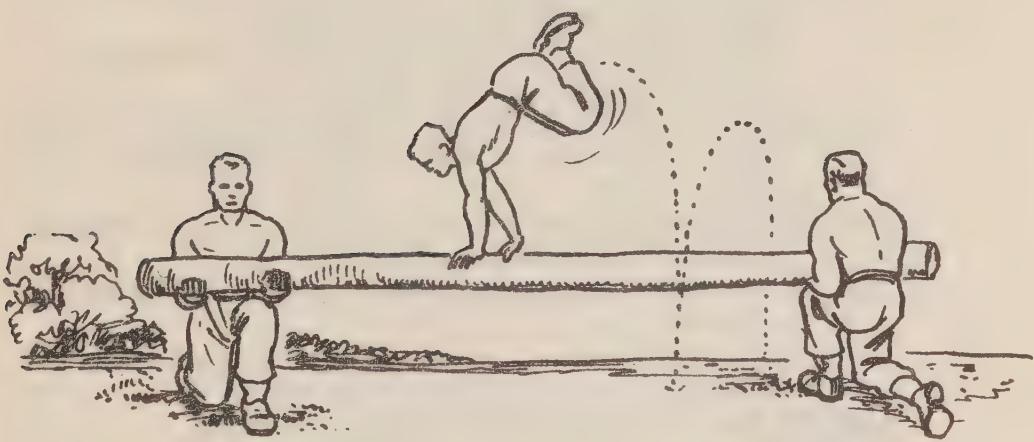


Fig. 172

Vaulting (see Pages 51 and 53)

- (xxix) (Log supported in an inclined position) Face vault with bent knees over the log and progressing forward (Fig 171).
- (xxx) (Log supported at each end, side standing) Face vault with bent knees from side to side, with or without rebound, and with or without progressing forward (Fig 172).
- (xxxi) (Log supported at each end) Various running vaults, eg, through vault, vault with foot assisting, or side vault (Fig 173).
- (xxxii) (Log supported at each end) Various running vaults while carrying rifle, eg, left hand vault, right hand vault, vault with foot assisting (Fig 174).
- (xxxiii) (Several parallel logs, supported at each end) Right hand vault followed by left hand vault or clear jump followed by one hand vault. All the above performed while carrying rifle.

Jumping (see Pages 54 and 55)

- (xxxiv) Running up and downward jump over three logs forming "steps" (Fig 175).
- (xxxv) Running jump with high take-off over raised log (Fig 176).
- (xxxvi) High jumps off both feet over several parallel logs, supported at each end (Fig 177).
- (xxxvii) (Log supported at each end, side standing) Jumping off both feet over log from side to side, with or without rebound and progressing forward (Fig 178).
- (xxxviii) (Two parallel logs, one slightly higher than the other, about five feet apart and supported at each end) Running fence and ditch jump (Fig 179).

(g) *Quick reaction activities using log. (See Pages 55, 56 and 57).*

- (i) (Log on floor) Running, hopping or jumping round log and back to places (competitive).
- (ii) (Astride, log in crook of arms) Quick passing sideways (competitive) (Fig 180).
- (iii) (Astride, trunk forward, log between legs) Quick passing forward or backward (competitive) (Fig 181).
- (iv) (Astride, arms upward, log above head) Quick passing forward (competitive) (Fig 182).
- (v) (Log under one arm) Chain racing (competitive) (Fig 183).
- (vi) (Circle formation, one end of log on ground) Quick passing from man to man (Fig 184).
- (vii) All forms of pulling and pushing using log.
- (viii) (Two teams facing each other about 10-15 yards apart, log on ground midway between teams) Race to pick up log and push or pull it over opponent's starting line (Fig 185).
- (ix) Boat race (competitive) (Fig 186).
- (x) (Two ranks astride, facing, one hand under log, one hand on top) Log circling sideways quickly a given number of times (Fig 187).

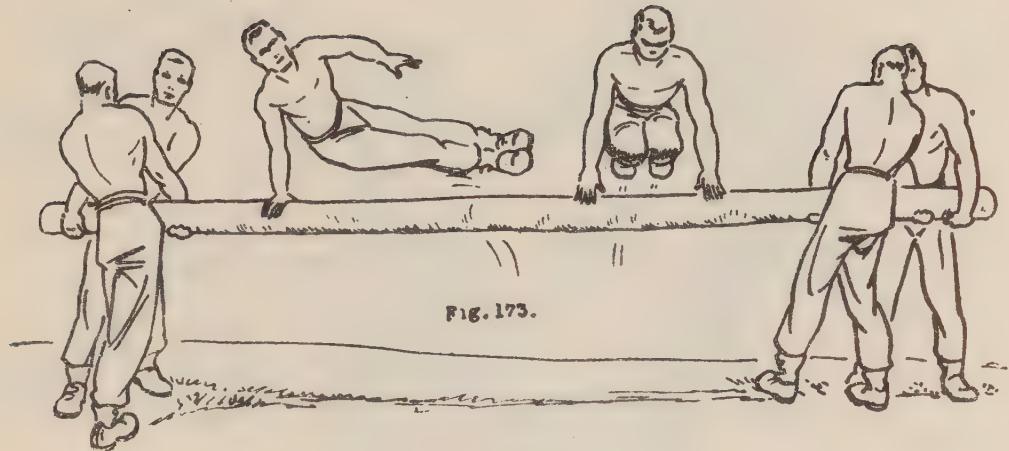


FIG. 173.

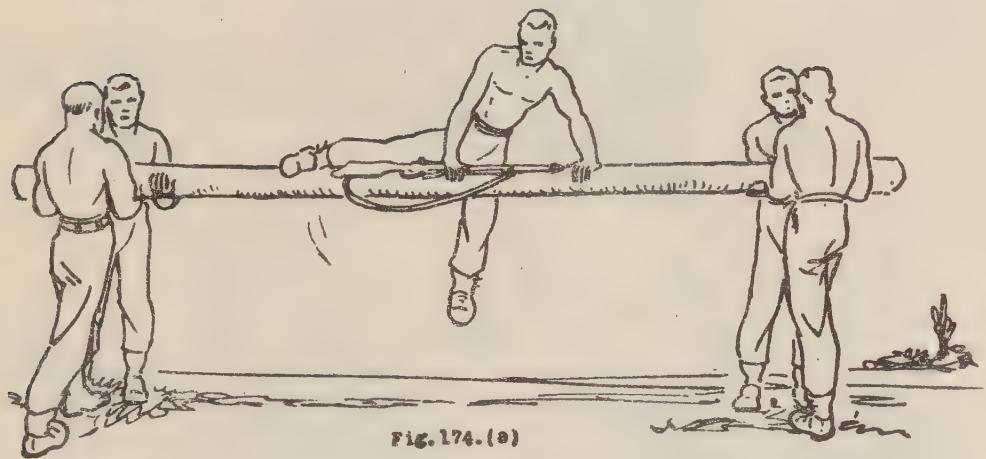


FIG. 174.(a)

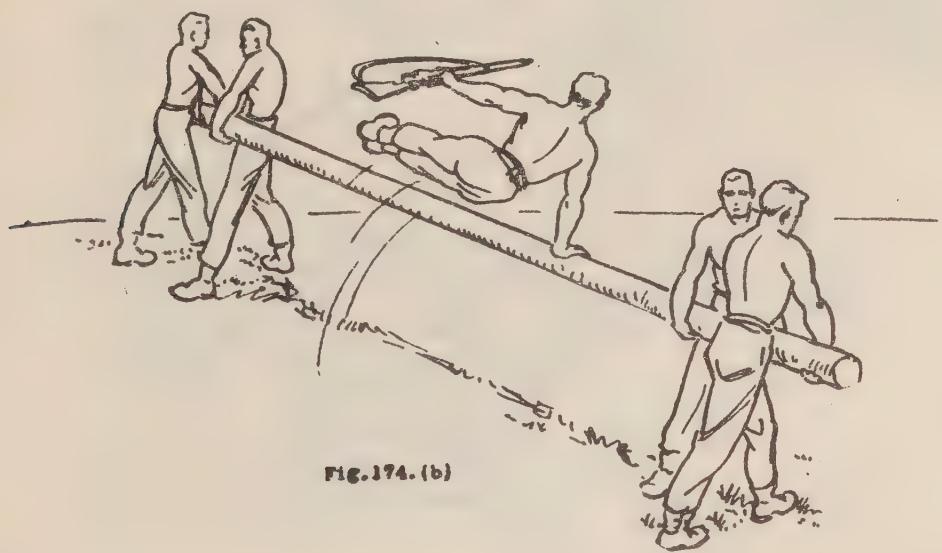


FIG. 174.(b)



Fig. 175.

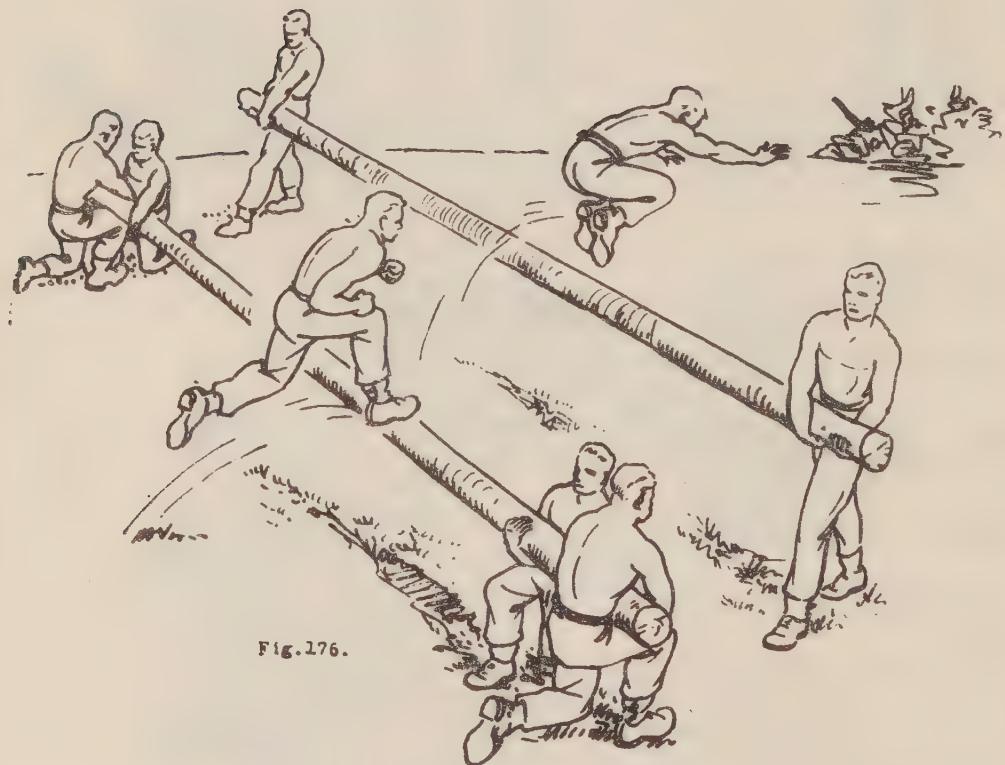


Fig. 176.



Fig. 177.

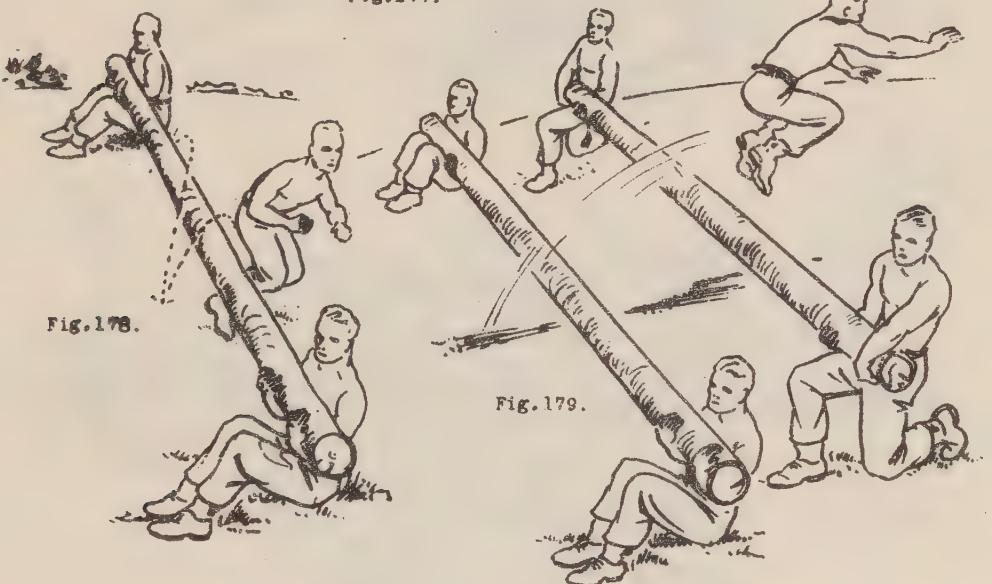


Fig. 178.

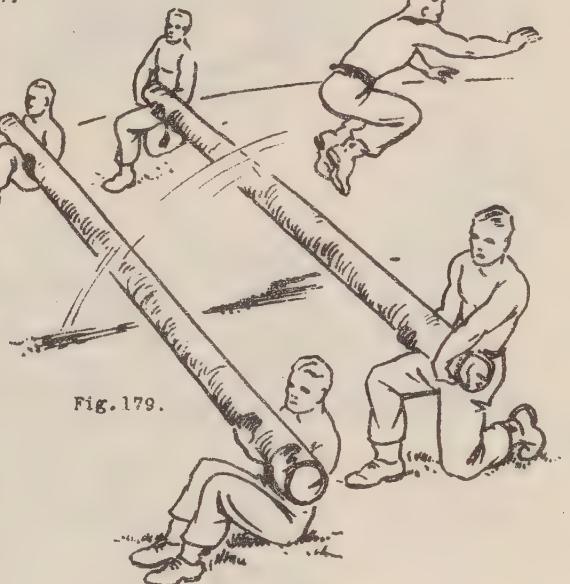


Fig. 179.

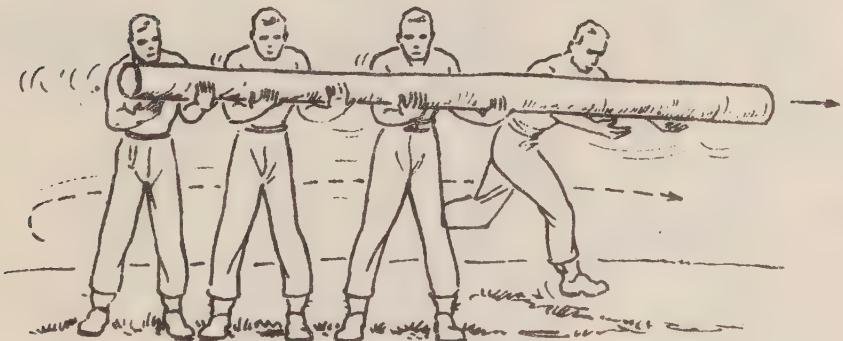


Fig. 180.

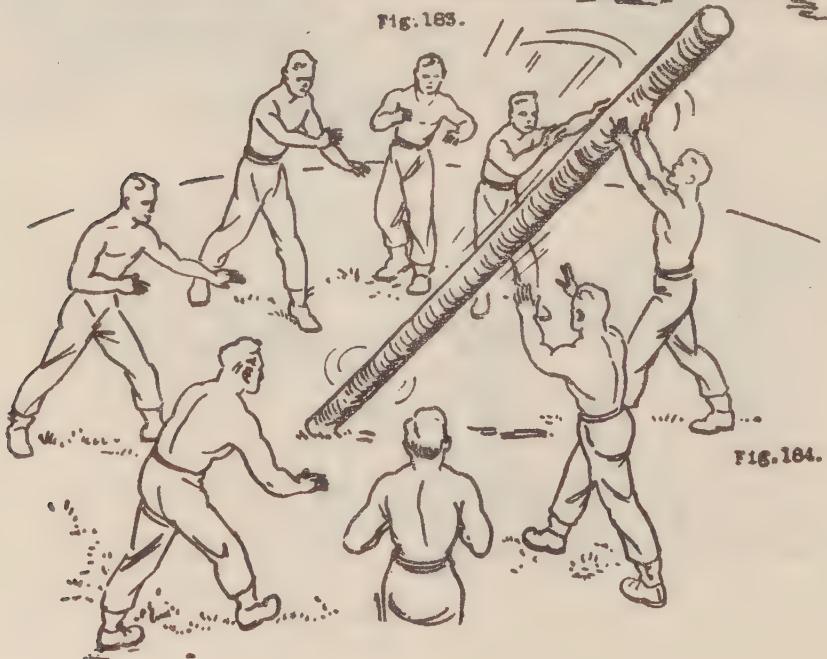
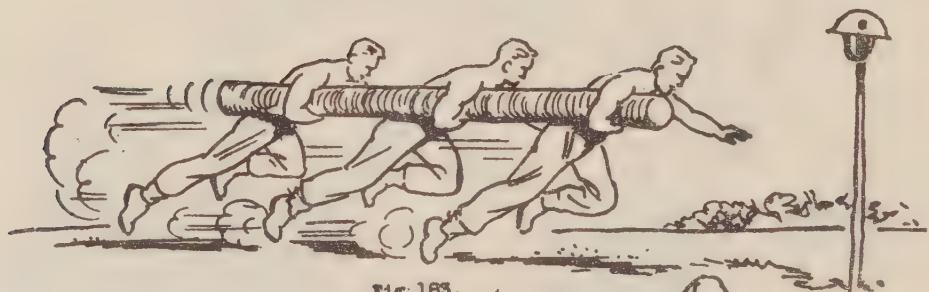
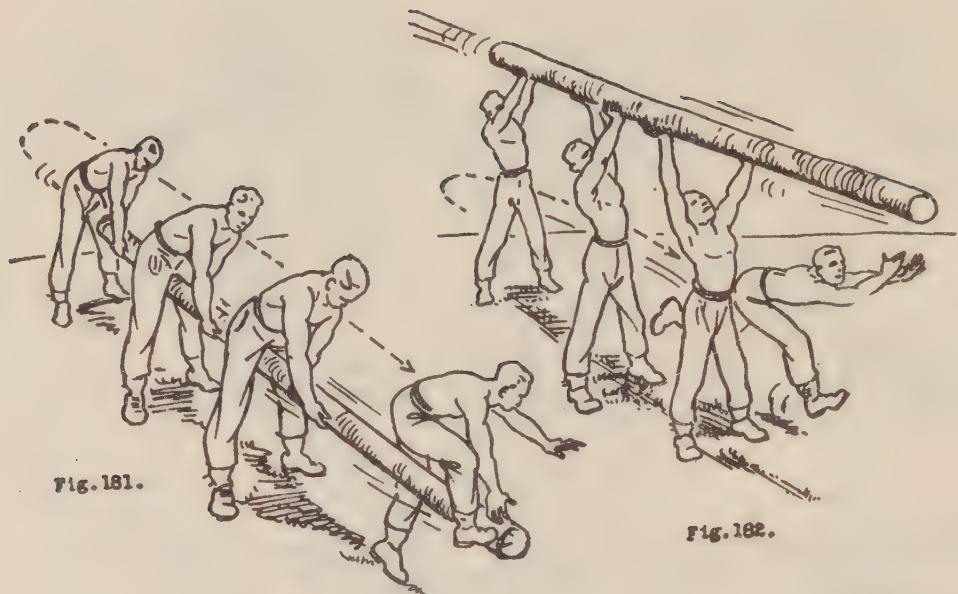




Fig. 185.

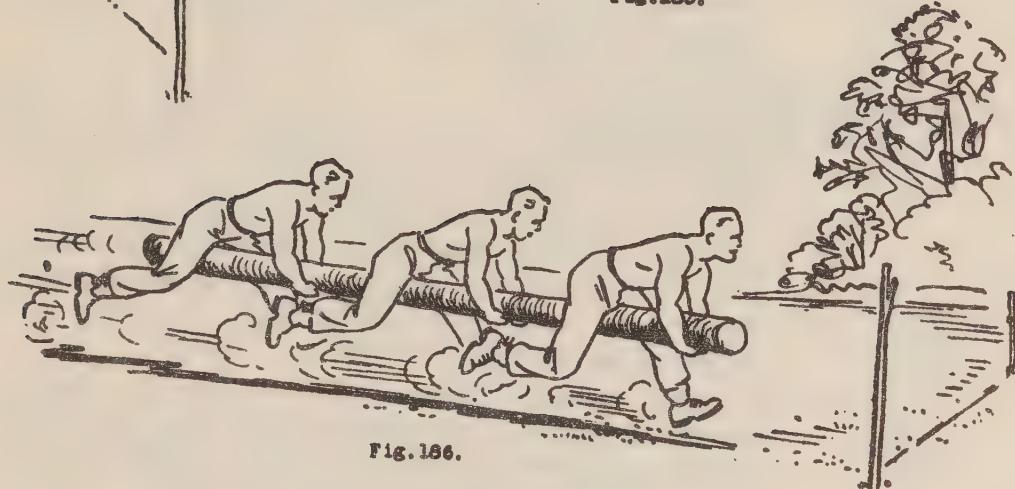


Fig. 186.



Fig. 187.

(h) *Medicine ball exercises.*

- In pairs (see Pages 59, 60, 61, 63, 64, 65, 66 and 67)
 - (i) (In pairs, astride, back to back, about one yard apart) Figure-of-eight passing backward to partner (Fig 188).
 - (ii) (In pairs, sitting, side by side, facing opposite directions, about one yard apart) Leg raising and passing ball under knees to partner (Fig 189).
 - (iii) (In pairs, astride, facing, several yards apart, ball held in front of chest with arms bent) Relaxed trunk bending downward and stretching forward, throwing ball forward to partner (Fig 190).
 - (iv) (In pairs, astride, back to back, several yards apart) Trunk and head turning, throwing ball backward to partner (Fig 191).
 - (v) (In pairs, facing, foot forward, ball held behind head) Throwing forward to partner (Fig 192).
 - (vi) (In pairs, astride, facing same direction) Relaxed trunk bending downward followed by trunk stretching upward throwing ball backward overhead to partner (Fig 193).
 - (vii) (In pairs, sitting astride, back to back, several yards apart) Trunk and head turning, throwing ball backward to partner (Fig 194).
 - (viii) (In pairs, facing, back lying, knees bent, feet on ground, arms upward, ball resting on ground and held with both hands) Trunk swinging forward-downward with leg stretching, throwing ball forward to partner (Fig 195).
 - (ix) (In pairs, sitting astride, back to back) Relaxed trunk bending downward, followed by trunk stretching upward, passing ball backward overhead with straight arms to partner (Fig 196).
 - (x) (In pairs, sitting astride, facing, several yards apart, ball held with both hands in front of one shoulder, trunk turned) Pushing ball forward to partner from left and right shoulders alternately (Fig 197).
 - (xi) (In pairs, back lying, head to head, arms upward grasping partner's arms, ball held between feet) Leg raising high and transferring ball to partner who grips it with one foot on top and one foot underneath (Fig 198).
 - (xii) (In pairs, astride, facing same direction, ball held in front of chest with arms bent) Relaxed trunk bending downward with arms straight, trunk stretching upward with knee and arm bending bringing ball to chest, followed by knee and arm stretching throwing ball backward overhead to partner (Fig 199).
 - (xiii) (In pairs, astride, facing same direction, several yards apart) Trunk and head turning, throwing ball backward over one shoulder to partner (Fig 200).

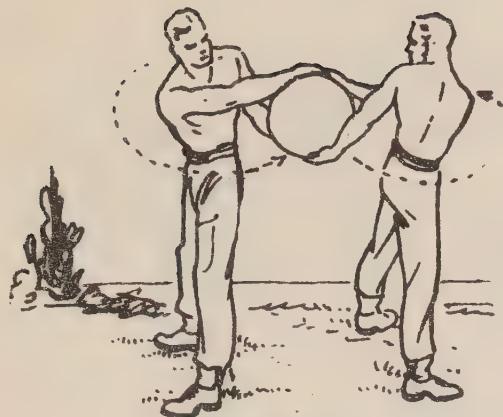


Fig. 188

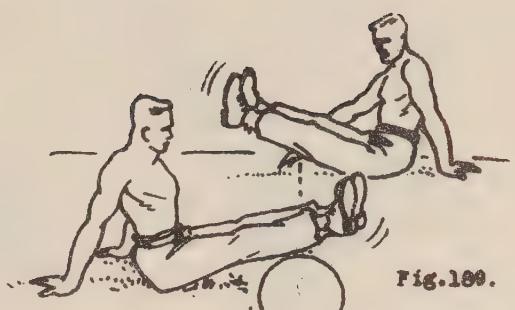


Fig. 189.

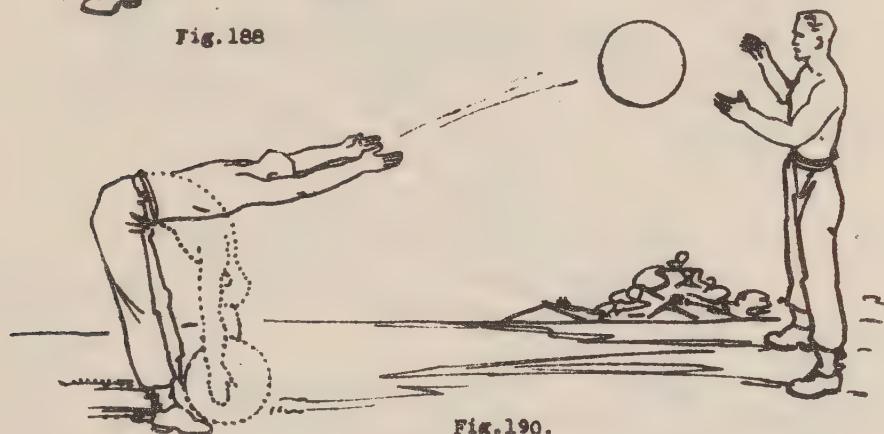


Fig. 190.

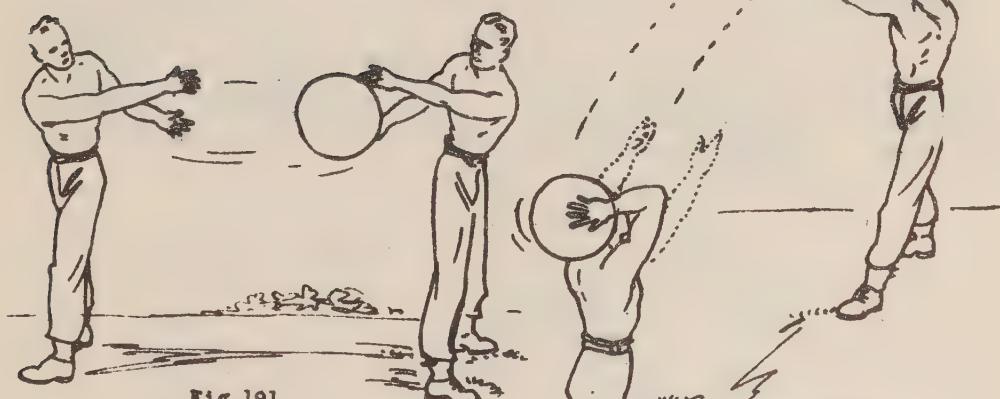


Fig. 191.

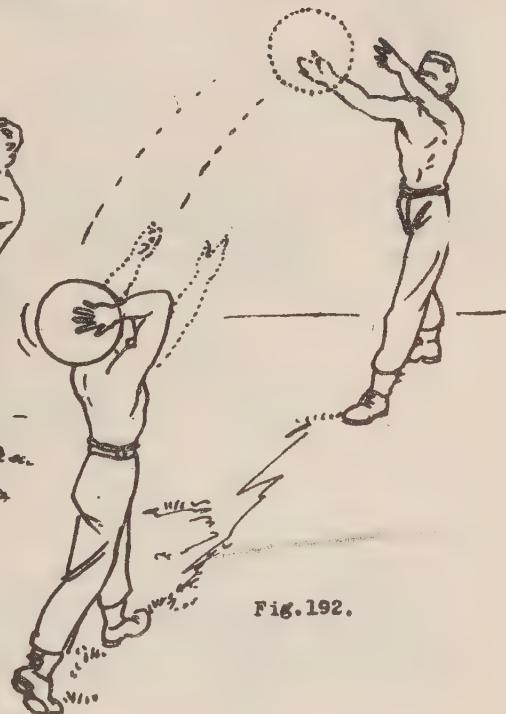


Fig. 192.

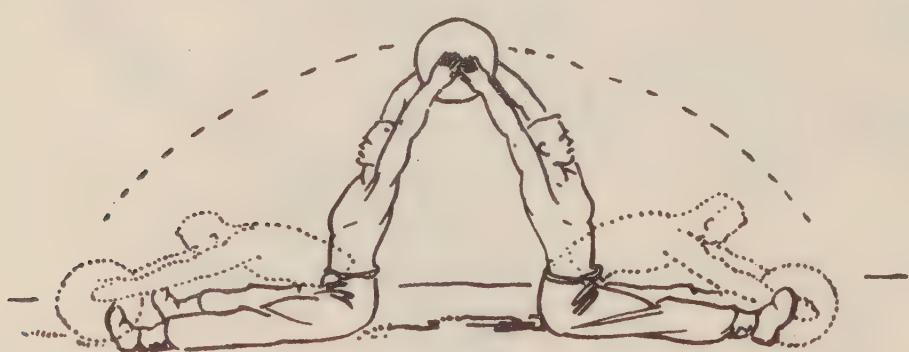
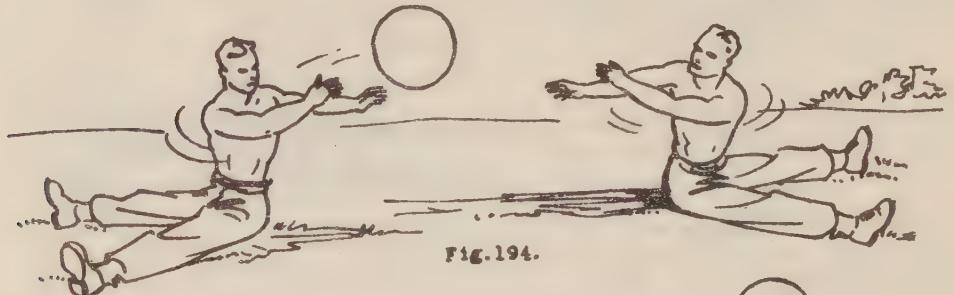




Fig. 197.

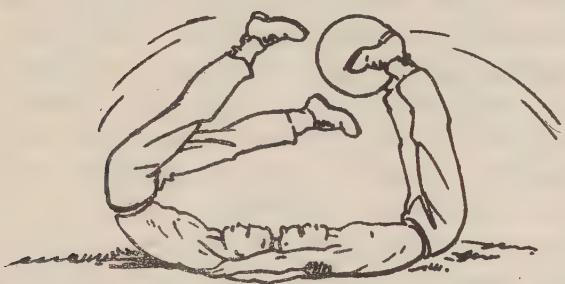


Fig. 198.

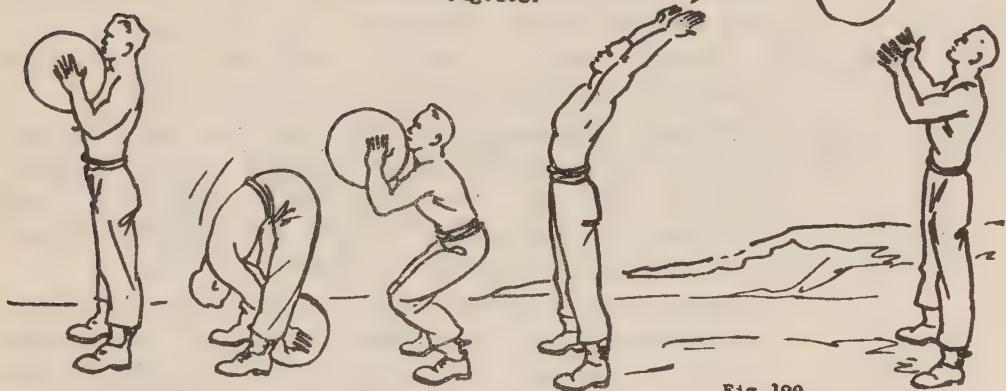


Fig. 199.



Fig. 200.

- (xiv) (In pairs, sitting, facing, ball held above head with straight arms) Leg raising high with trunk lowering backward until toes touch ball which is held on ground overhead followed by trunk swinging forward-downward and throwing ball forward to partner as the body passes through the sitting, arms upward position (Fig 201).
- (xv) (In pairs, astride, back to back, about one yard apart, arms straight, ball held in front of body with both hands) Passing ball backward alternately overhead and between legs to partner (Fig 202).
- (xvi) (In pairs, astride, back to back, about one yard apart, arms forward, ball held at shoulder-height) Trunk and head turning, passing ball backward with straight arms to partner (Fig 203).
- (xvii) (In pairs, facing same direction, several yards apart, one standing astride, one sitting with knees bent, and ball held between feet) Rolling backward quickly throwing ball backward overhead from feet to partner (Fig 204).
- (xviii) (In pairs, facing, prone lying, one or two yards apart, ball held in front of face with both hands, arms bent) Trunk bending backward followed by throwing ball forward to partner (Fig 205).
- (xix) (In pairs, facing) Lobbing ball to partner who catches it behind his back (Fig 206).
- (xx) (In pairs, facing same direction, several yards apart, ball held above head with straight arms) Jumping astride and at the same time relaxed trunk bending downward, throwing ball backward between legs to partner (Fig 207).
- (xxi) (In pairs, facing, several yards apart, one man back lying, neck rest with fingers interlaced, other man standing astride) "Cycling", kicking lobbed ball back to partner, using sole of left and right foot alternately (Fig 208).
- (xxii) (In pairs, facing) Throwing from partner to partner, using one hand only to throw and catch, and keeping ball from touching body or forearm (Fig 209).
- (xxiii) (In pairs, facing) Throwing from partner to partner, using one hand only to throw and catch, and bending to touch the ground with back of the hand in which the ball is held (Fig 210).
- (xxiv) (In pairs, sitting astride, facing, about two yards apart) Relaxed trunk bending downward lobbing ball forward to partner so that he has to reach for it (Fig 211).
- (xxv) (In pairs, astride, facing) Trunk turning with knee bending, throwing ball from behind back to partner (Fig 212).
- (xxvi) (In pairs, facing, several yards apart, knees full bend forward, ball held in front of chest) Throwing and catching, trying to make partner lose his balance (Fig 213).



Fig. 201.



Fig. 202.

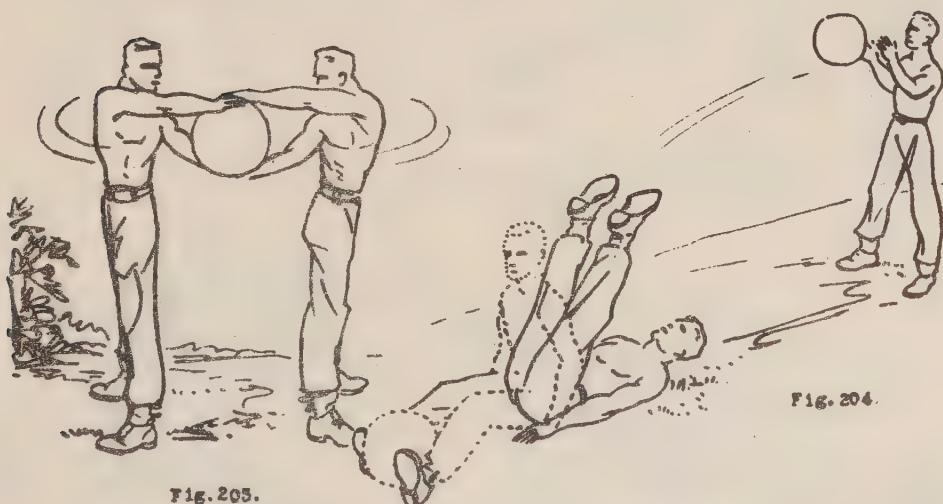


Fig. 203.

Fig. 204.

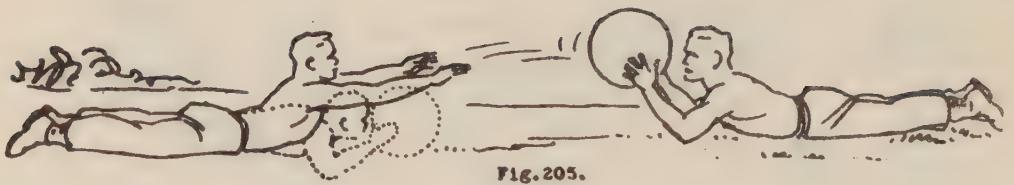


Fig. 205.



Fig. 206.

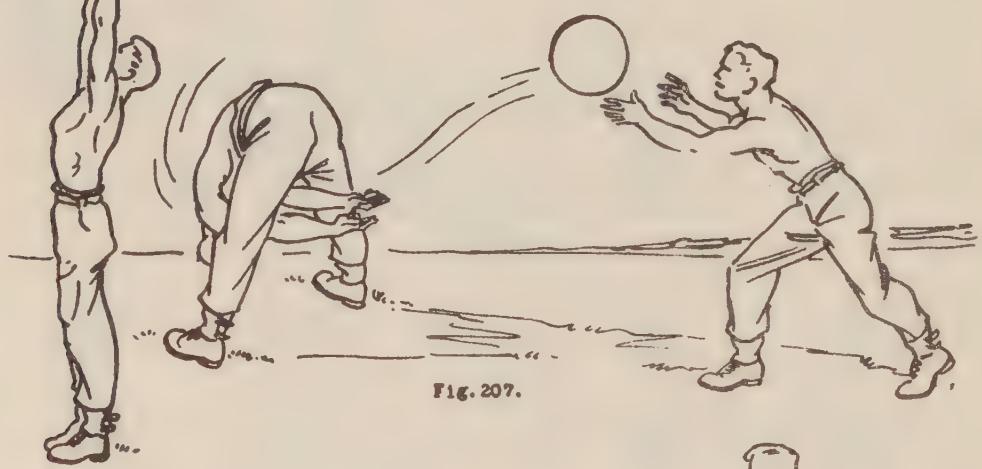


Fig. 207.

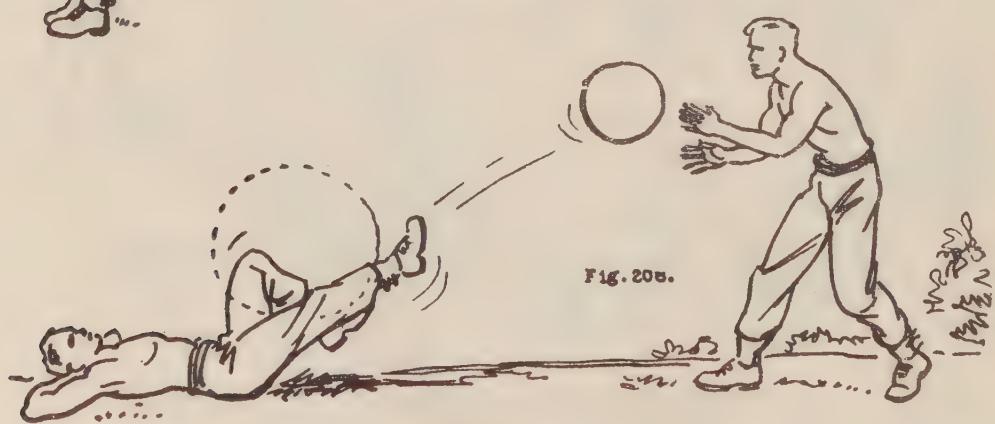


Fig. 208.

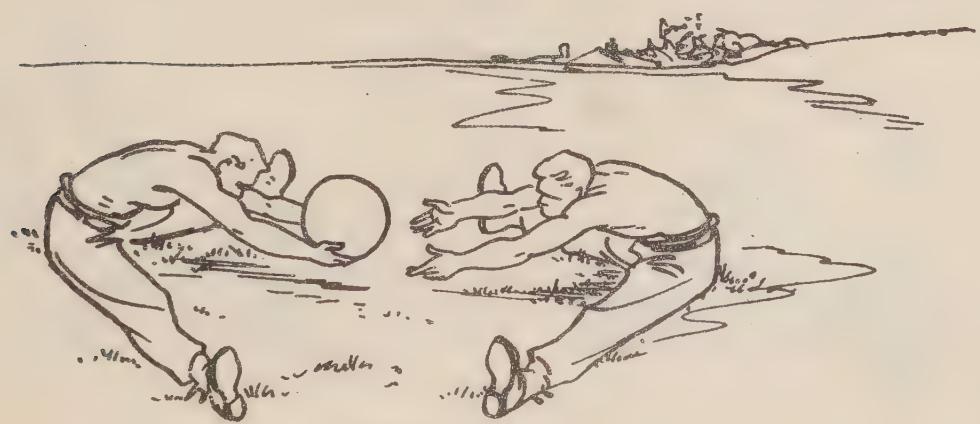
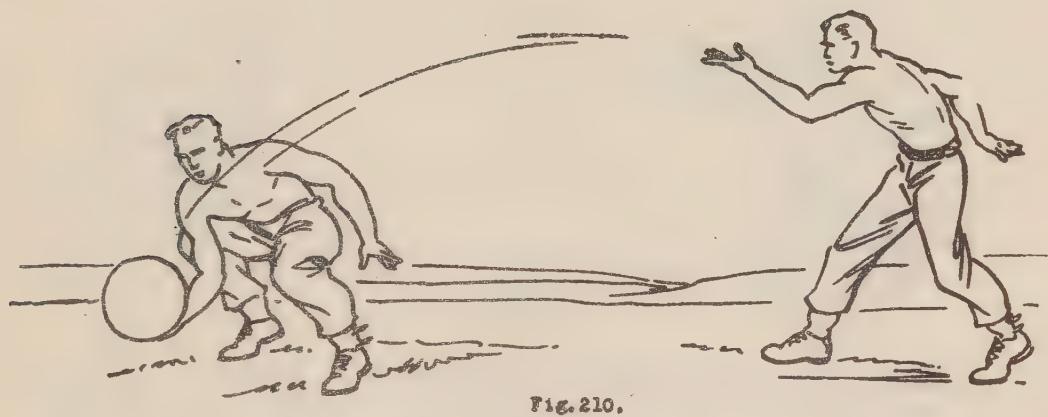
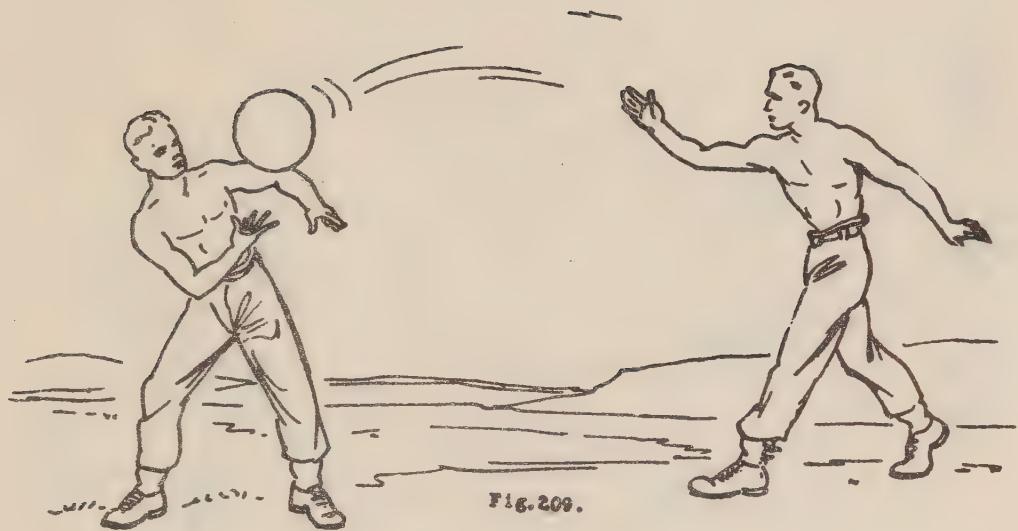




Fig. 212.

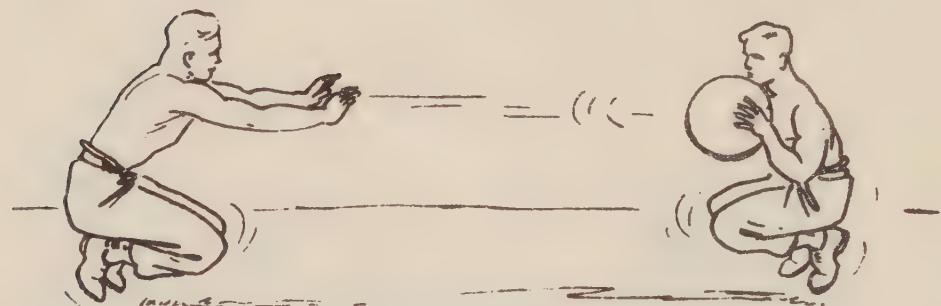


Fig. 213.

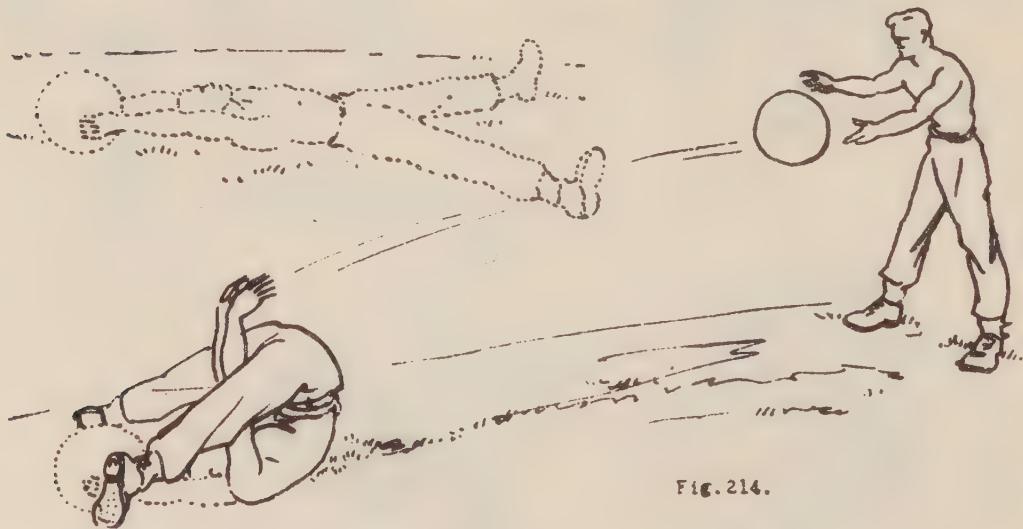


Fig. 214.

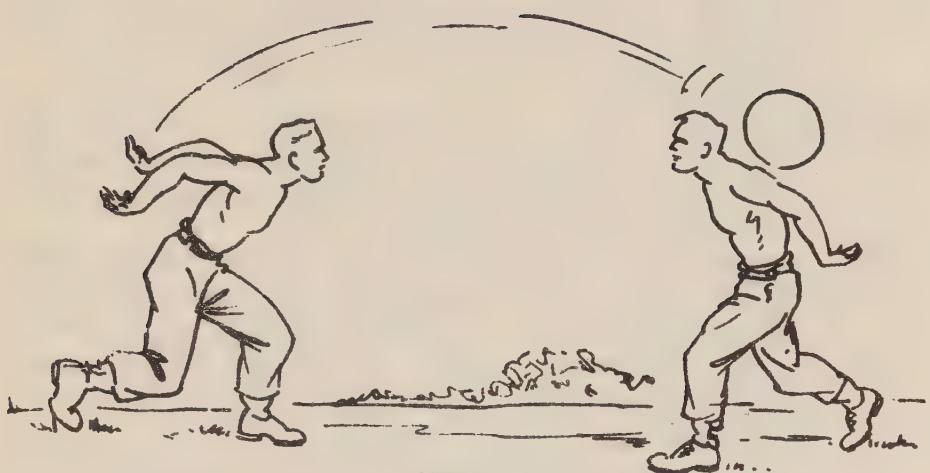


Fig. 215.

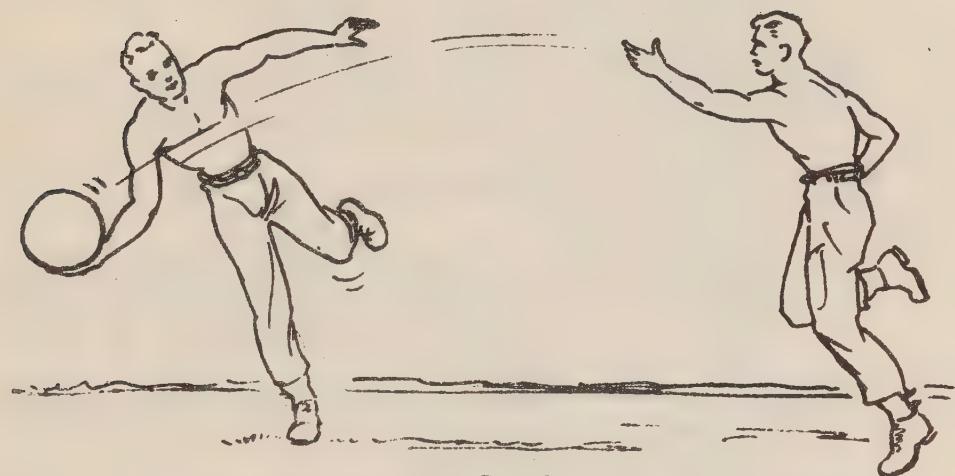


Fig. 216.



Fig. 217.

(xxvii) (In pairs, facing, several yards apart, one man standing astride, one man back lying, astride, holding ball with straight arms on ground above his head) Leg raising high, keeping them apart to touch ground over head with toes, followed by throwing ball between legs to partner (Fig 214).

(xxviii) (In pairs, facing, several yards apart, ball held behind back with both hands) Lobbing ball overhead to partner who catches it behind his back (Fig 215).

(xxix) (In pairs, facing, several yards apart, standing on one foot, ball resting on the palm of one hand) Throwing and catching between partners, using one hand only (Fig 216).

(xxx) (In pairs, facing, several yards apart, sitting with knees bent, heels resting on ground and soles against ball, trunk inclined slightly backward, arms backward, palms on floor) Quick knee stretching, pushing ball forward to partner (Fig 217).

Individual (*see Pages 69, 70 and 71*)

- (i) (Sitting astride, ball resting on palm of one hand at shoulder-height) Pushing ball upward as high as possible, using left and right hands alternately, catching with both hands (Fig 218).
- (ii) Bouncing ball on thighs (Fig 219 (a)).
- (iii) (Feet closed, ball held by both hands in front of body) Circling ball round body without allowing it to touch (Fig 219 (b)).
- (iv) (Sitting, wide astride) Rolling ball round in a large circle (Fig 220).
- (v) (Astride, ball placed between feet) Jumping upward kicking ball backward and upward. Turning about with a jump and catching it at about chest-height (Fig 221).
- (vi) (Astride, arms sideways, palms upward, ball resting on palm of one hand) Throwing ball overhead from hand to hand (Fig 222).
- (vii) (Astride) Relaxed trunk bending downward and passing ball in a figure-of-eight movement round and between the legs and just clear of the ground (Fig 223).
- (viii) (Sitting with legs and feet together, ball held in both hands in front of chest, trunk inclined slightly backward) Rolling ball down body, kicking it up again and catching (Fig 224).
- (ix) Throwing ball backward overhead and catching behind back, followed by throwing forward overhead, catching it in front of body (Fig 225).
- (x) Throwing ball behind and round the body and over the opposite shoulder, catching it with the other hand (Fig 226).
- (xi) (Astride, trunk slightly forward, ball resting on palm of one hand) "Waiter's balance exercise" (Fig 227).
- (xii) (Feet closed, arms forward, palms upward, ball resting on palms) Knee bending forward with increasing range, holding the ball in arms forward position throughout (Fig 228).

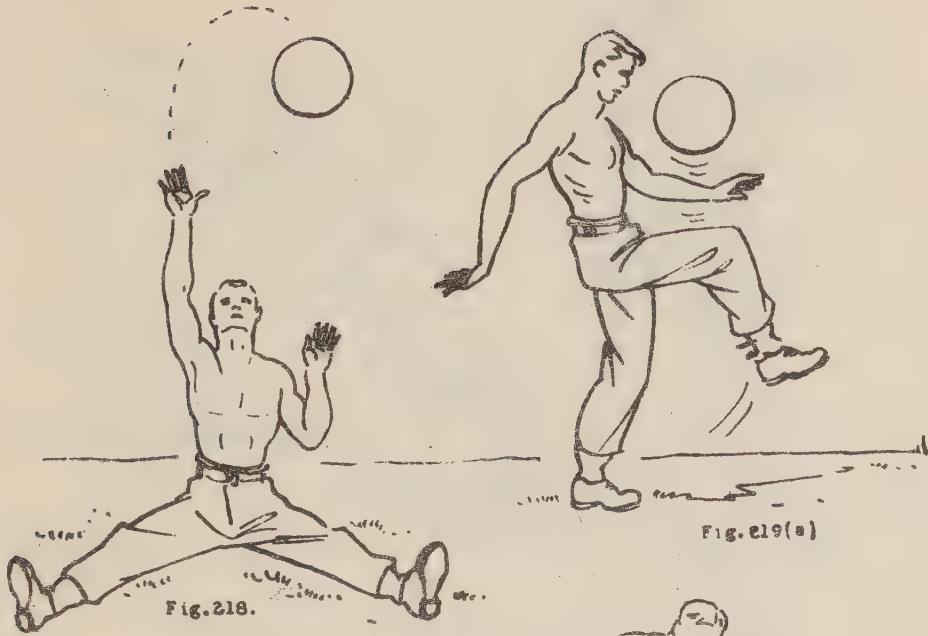


Fig. 219(a).



Fig. 219(b).

Fig. 220.

(a)

(b)

(c)



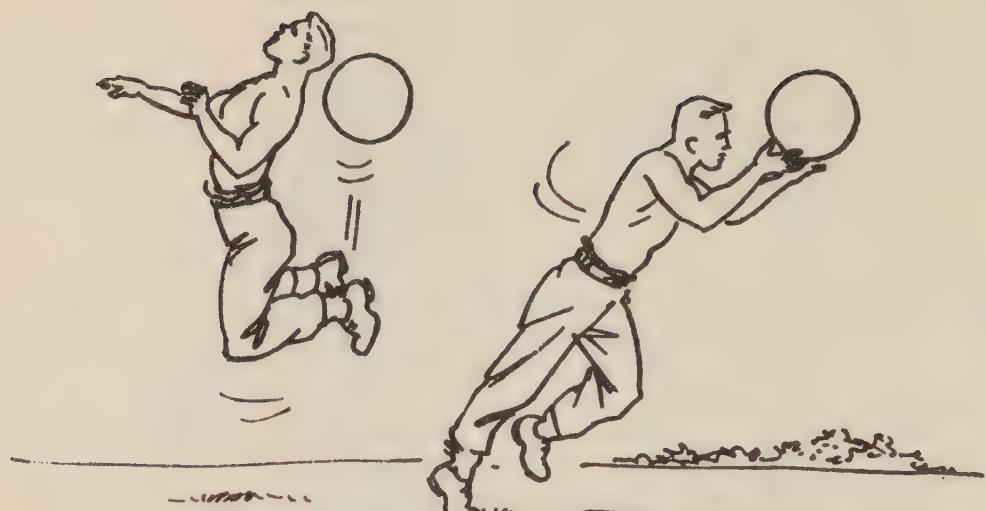


Fig. 221.

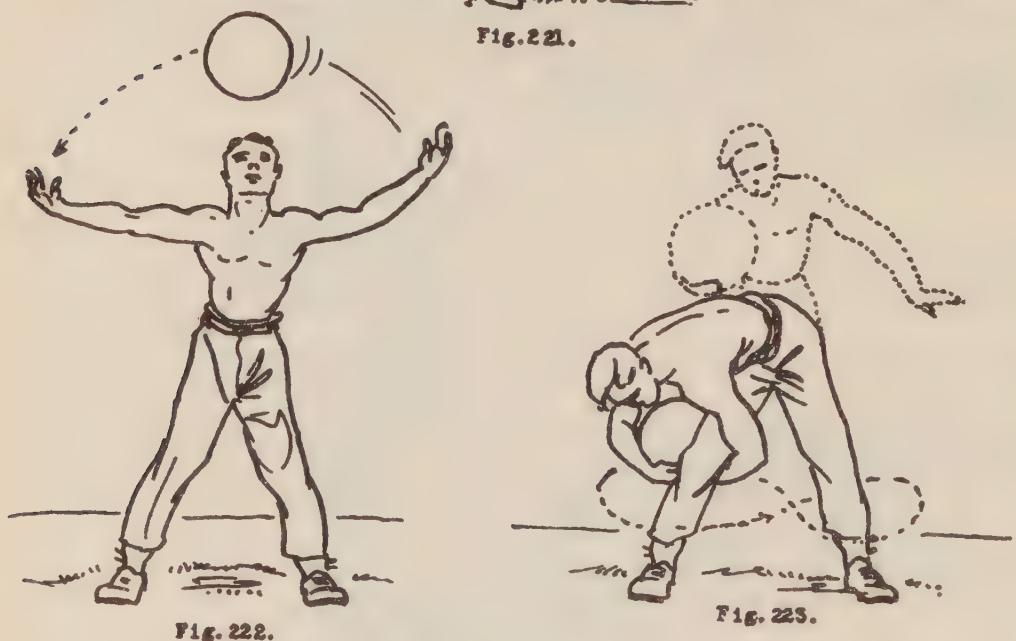


Fig. 222.

Fig. 223.



Fig. 224.

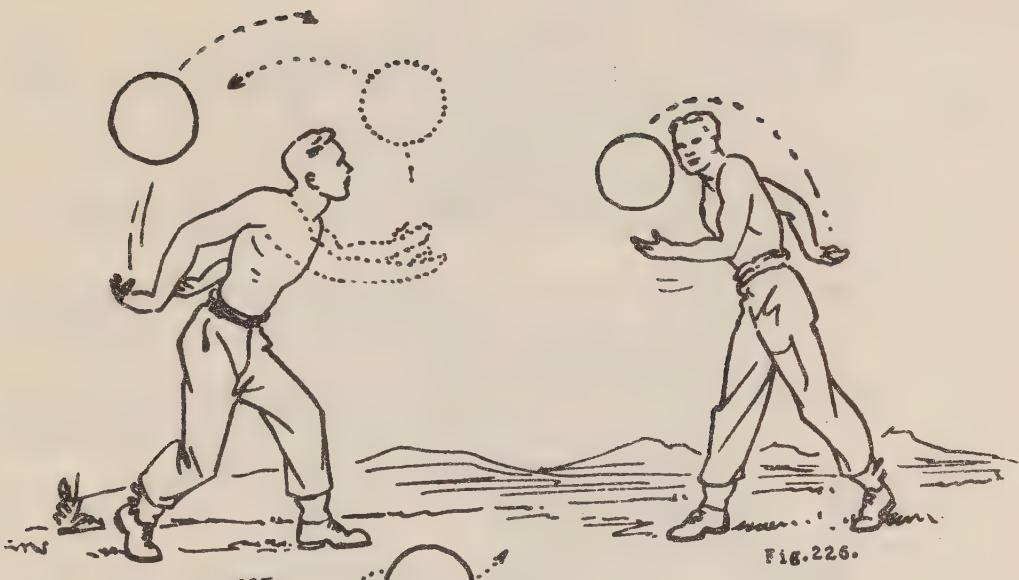


Fig. 225.

Fig. 226.

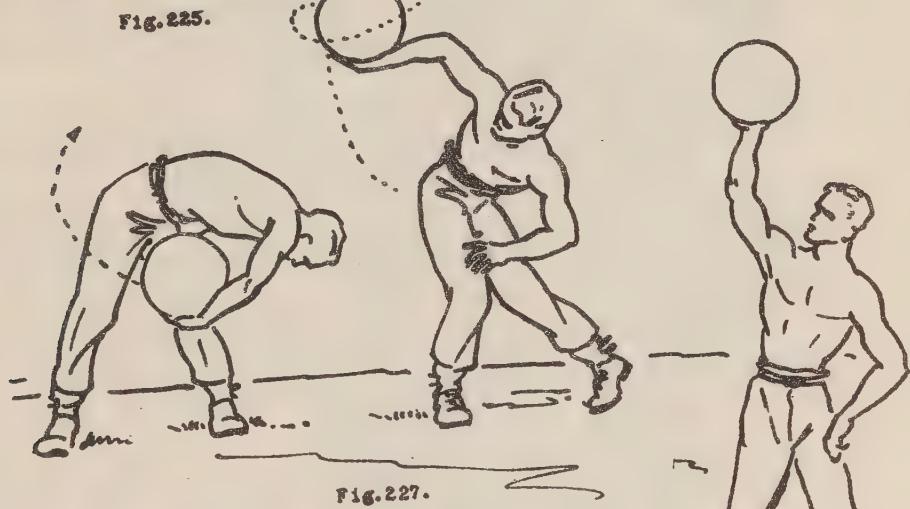


Fig. 227.



Fig. 228.

(i) *Quick reaction activities using medicine ball.* (See Pages 73, 74 and 75.)

- (i) Put ball on ground and run round it, or jump over it, a given number of times.
- (ii) First man standing on a ball.
- (iii) First man sitting with ball held above head, or in any other specified position.
- (iv) (In pairs) Struggle ball (Fig 229)
- (v) Running arch ball (Fig 230).
- (vi) Pass ball quickly round body a given number of times.
- (vii) (In pairs, facing, several yards apart) Running or hopping round partner's ball a given number of times (Fig 231).
- (viii) (In pairs, facing, several yards apart) Running and catching partner's ball before it touches the ground after being thrown into the air by him.
- (ix) Hands and knees crawl pushing ball forward with the head (Fig 232).
- (x) Many of the exercises lend themselves to competitive application when repeated quickly a given number of times.
- (xi) (Circle formation, facing inwards, two, three or four men in centre, each with a ball) Practising straight left hand punch using ball (Fig 233).
- (xii) (In pairs, facing) Purposeful footwork and straight left and right hand punching practice (Fig 234).
- (xiii) (Circle formation, facing outwards) Rapid passing from man to man, using several balls (Fig 235).
- (xiv) (In pairs, facing, several yards apart) One man astride jumping, partner trying to throw ball between his feet (Fig 236).
- (xv) (Circle formation, sitting, facing inwards) Leg raising and passing ball quickly sideways under the legs from man to man round the circle. Several balls should be used (Fig 237).

(j) *Pulling and pushing.* (See Pages 76, 77 and 78.)

- (i) Pulling, rope attached to tree (Fig 238).
- (ii) Pulling, rope attached to derrick (Fig 239).
- (iii) Hauling, rope attached to derrick or log (Fig 240).
- (iv) Pulling using log (Fig 241).
- (v) Pushing using log (Fig 242).
- (vi) Hauling using rope, one, two or more men per team (Fig 243).
- (vii) Pulling, using two, three or four ropes attached to iron ring (Fig 244).
- (viii) Pushing on log versus pulling on rope (Fig 245).
- (ix) Pulling heavy tree stump, or several logs lashed together, on the flat or up slopes (Fig 246).
- (x) Hauling heavy tree stump or logs lashed together (Fig 247).

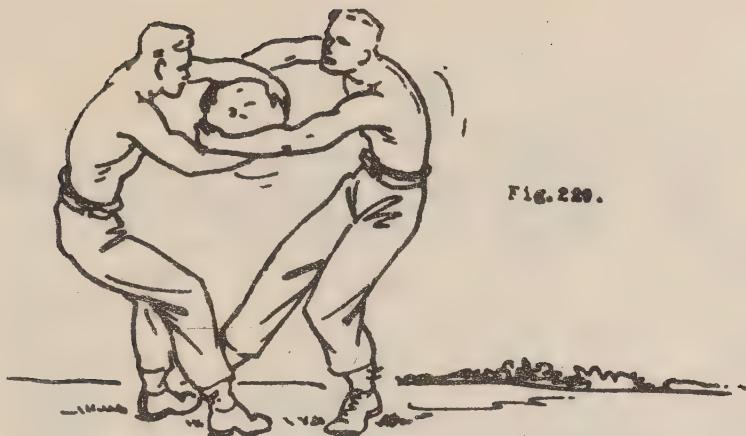


Fig. 229.



Fig. 230.

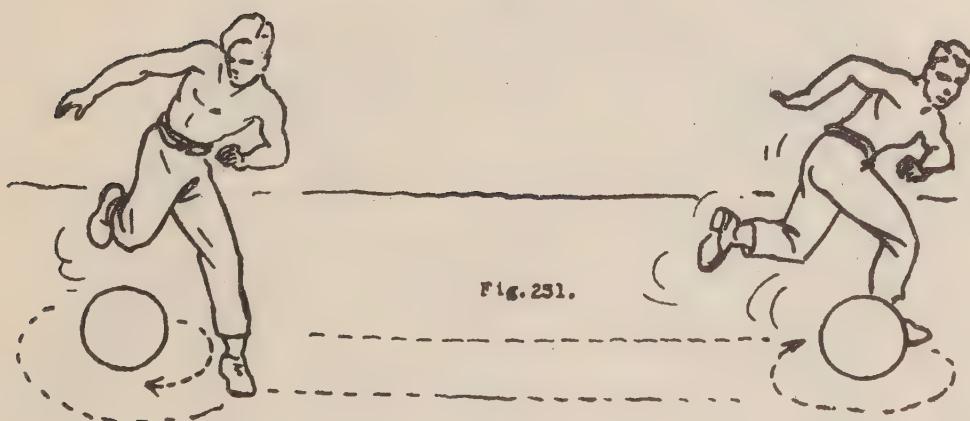


Fig. 231.



Fig. 252.



Fig. 253.



Fig. 254.



Fig. 235.



Fig. 236.



Fig. 237.



Fig. 238.

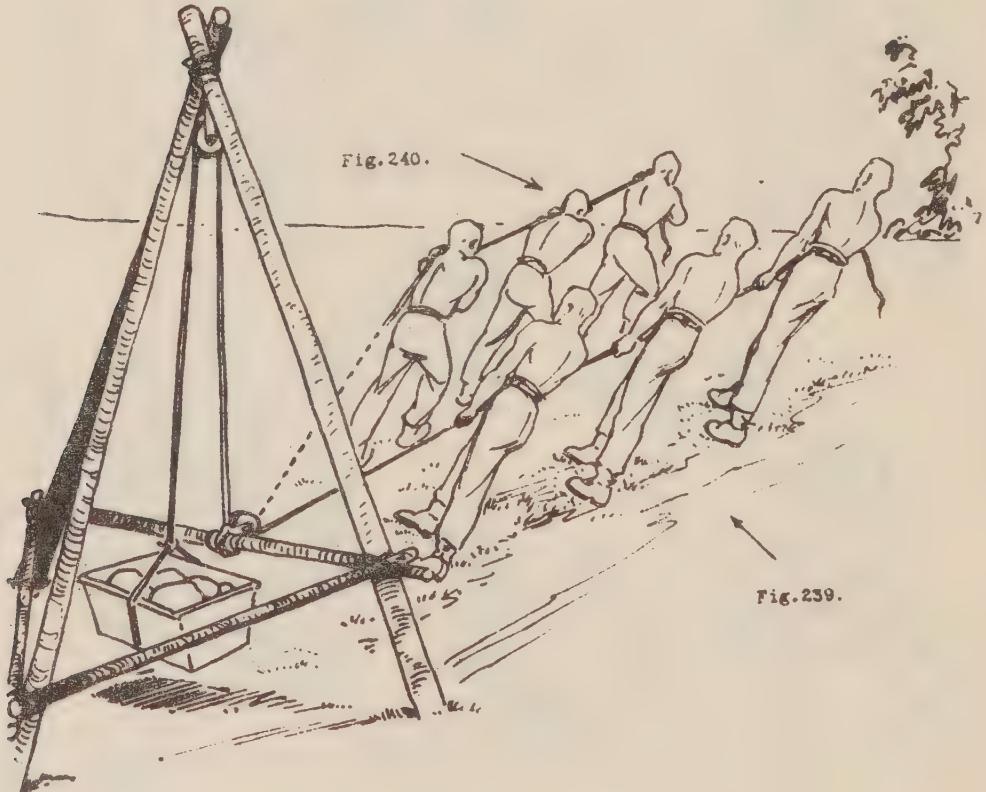


Fig. 239.

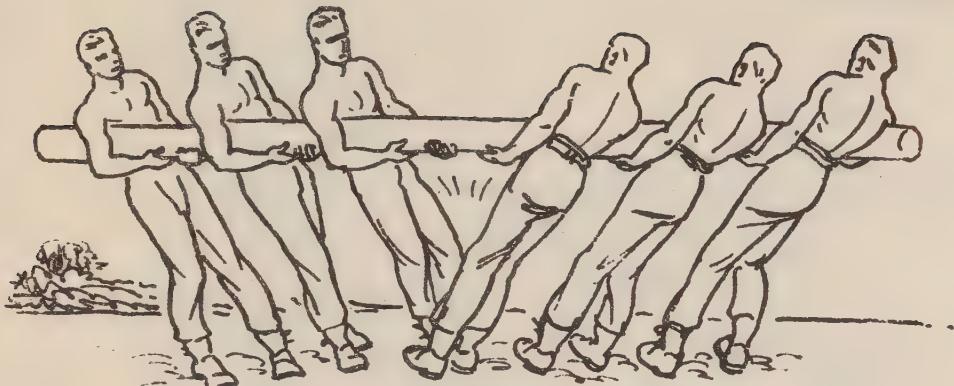


Fig. 241.

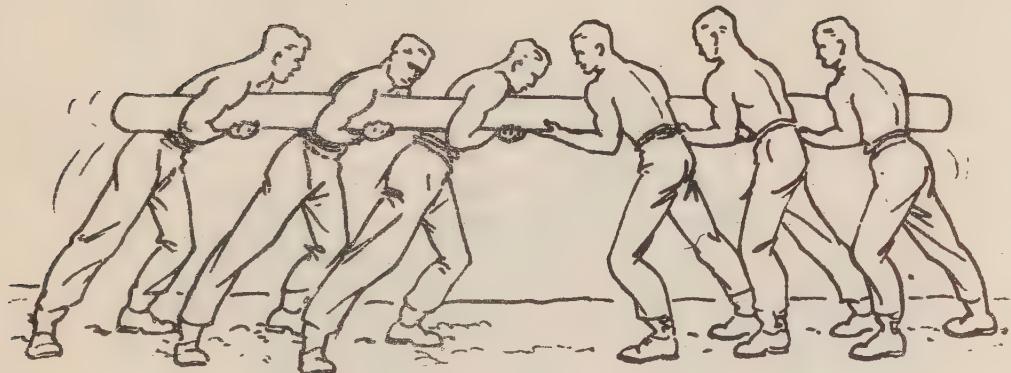


Fig. 242.

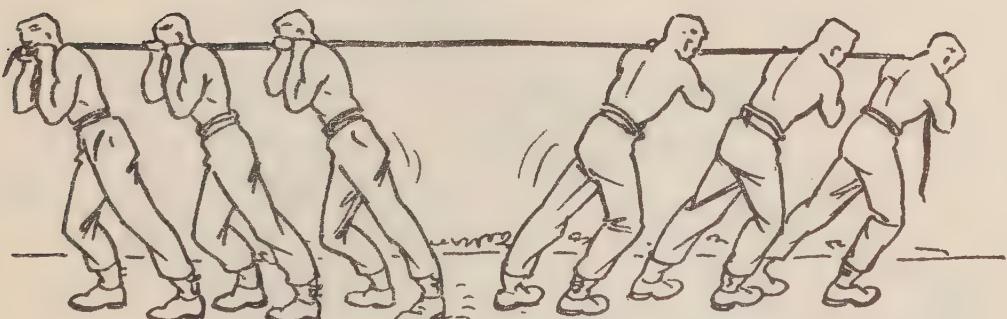


Fig. 243.

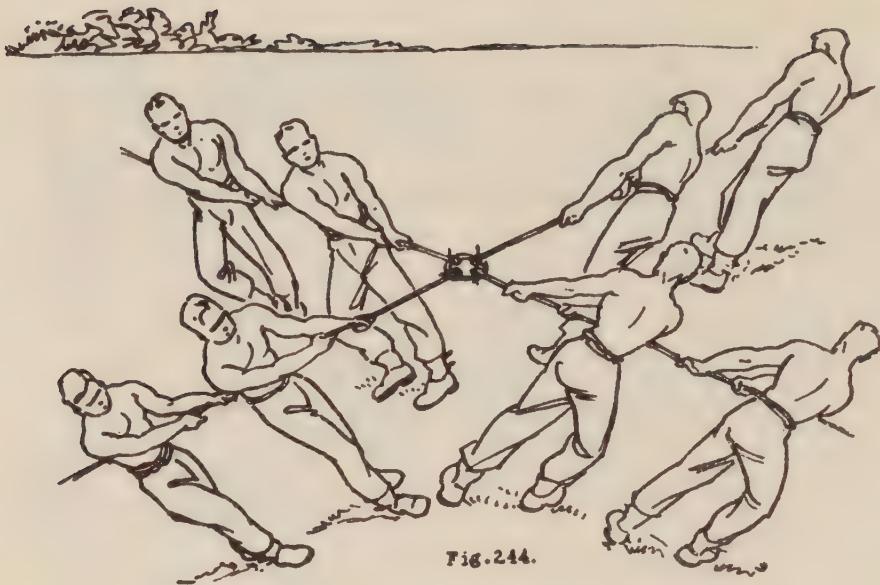


Fig. 244.

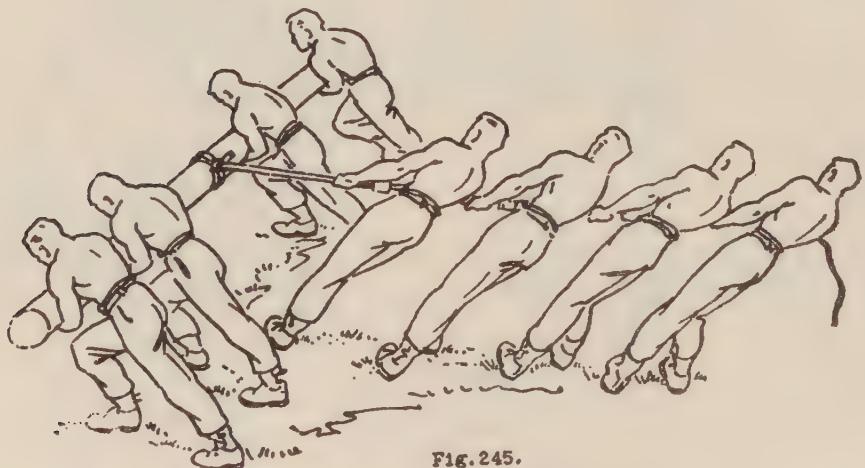


Fig. 245.

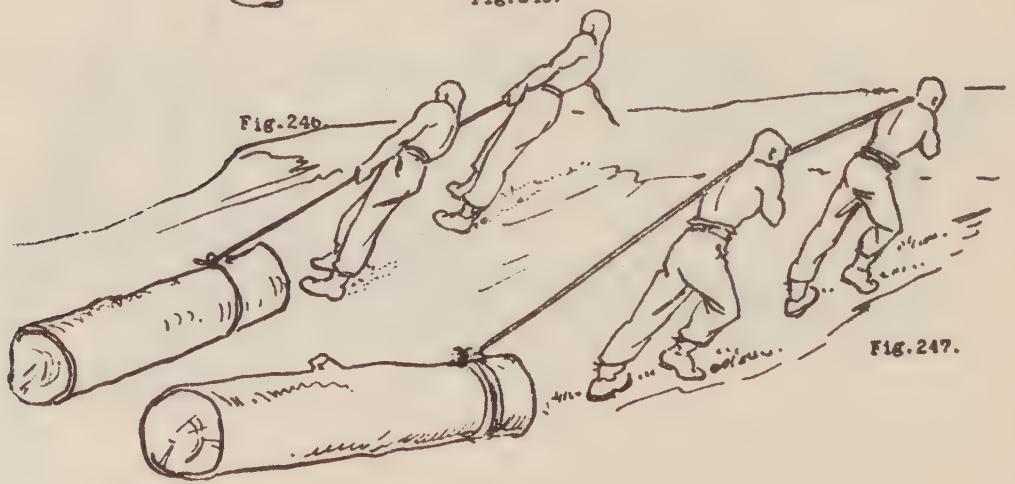


Fig. 246.

Fig. 247.

(k) *Scaling.* (See Pages 80, 81 and 82.)*High wall, bank or anti-tank ditch.*

- (i) Stirrup lift (Fig 248).
- (ii) Vertical lift (Fig 249).
- (iii) Steps (Fig. 250).
- (iv) Brick, stick and rope (Fig 251).
- (v) Standing on partner's shoulders (Fig 252).
- (vi) Standing on partner's back (Fig 253).
- (vii) Individual (Fig 254).
- (viii) Descending (Fig 255).

Cliff, quarry or high window. (See Pages 82, 83 and 84.)

- (i) Ascending—vertical rope, feet against cliff (Fig 256).
- (ii) Ascending—double line stirrups (Fig 257).
- (iii) Ascending—single line stirrup (Fig. 258).
- (iv) Ascending—fly walk (Fig 259).
- (v) Descending—abseil method I (Fig 260).
- (vi) Descending—abseil method II (Fig 261).
- (vii) Descending—double line stirrup (Fig 262).
- (viii) Descending—fly walk (Fig 263 (a)).
- (ix) Descending—sliding down rope by means of a toggle rope (Fig 263 (b)).

Low wall. (See Page 84.)

- (i) With a run (Fig 264).
- (ii) Without a run (Fig 265).
- (iii) With assistance (Fig 266).

(l) *Stick exercises.* (See Pages 85 and 86.)

- (i) Pushing using one stick (Fig 267).
- (ii) Pulling using one stick (Fig 268).
- (iii) Pushing backward using two sticks (Fig 269).
- (iv) Pulling forward using two sticks (Fig 270).
- (v) Stick wrestle (Fig 271).
- (vi) Pushing horizontal stick (Fig 272).
- (vii) Squat tug-of-war (Fig 273).
- (viii) Grip and twist (Fig 274).
- (ix) Lifting the sack (Fig 275).
- (x) See-saw (Fig 276).
- (xi) Push or pull (Fig 277).
- (xii) Pull up (Fig 278).
- (xiii) Turning under the stick (Fig 279).

(m) *Strengthening games.* (See Pages 87 to 90.)

- (i) Bull in the ring (Fig 280).
- (ii) Catch and pull tug-of-war (Fig 281).
- (iii) Chariot race (Fig 282).
- (iv) Clear the circle (Fig 283).
- (v) Forward pressing by ranks (Fig 284).
- (vi) Four cornered tug-of-war (Fig 285).
- (vii) King of the ring (Fig 286).
- (viii) Lifting relay (Fig 287).
- (ix) Sprinting tug-of-war (Fig 288).
- (x) Struggle ball (Fig 289).
- (xi) Tossing the man (Fig 290).
- (xii) VC race (Fig 291).
- (xiii) Wheelbarrow race (Fig 292).

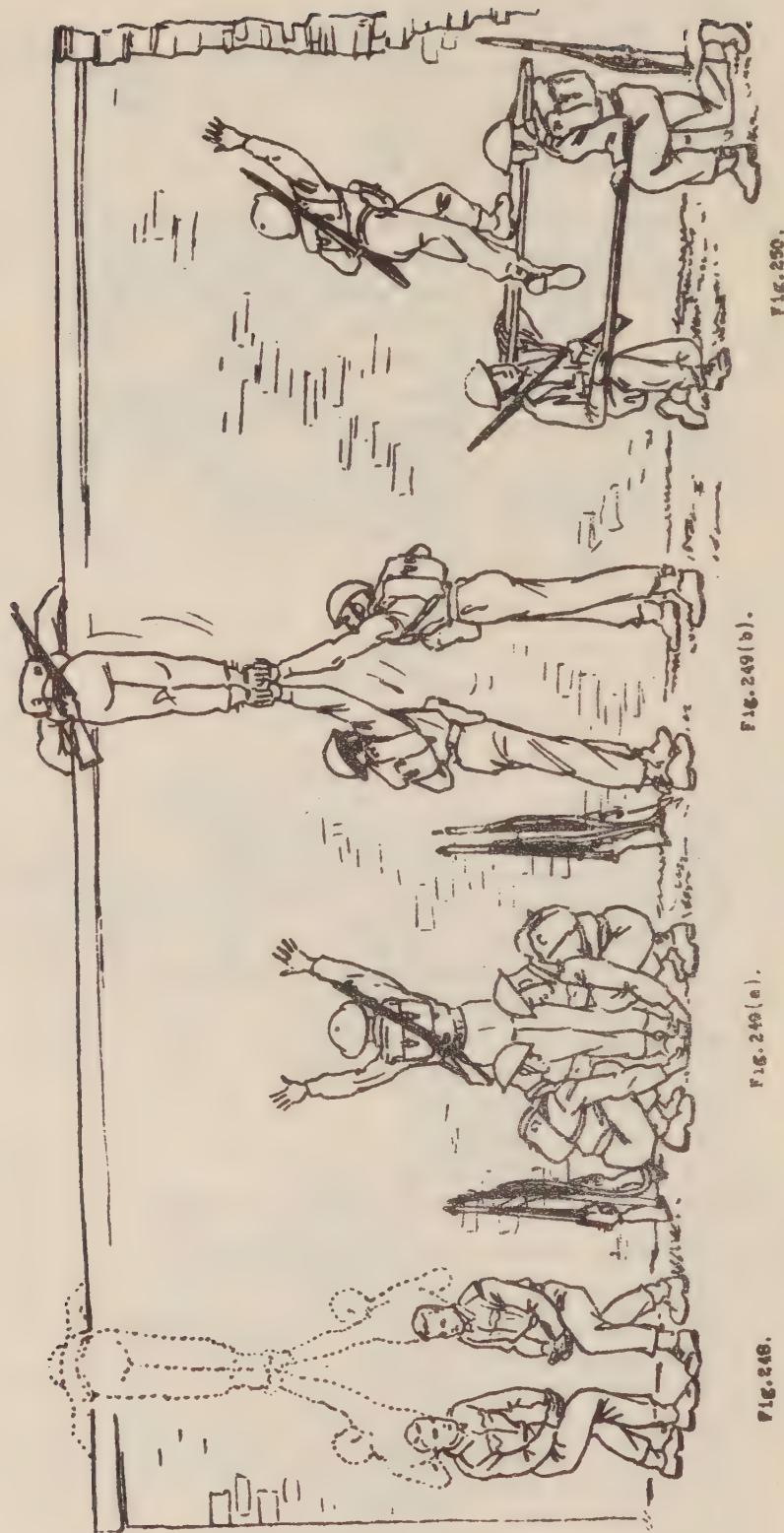




Fig. 251.

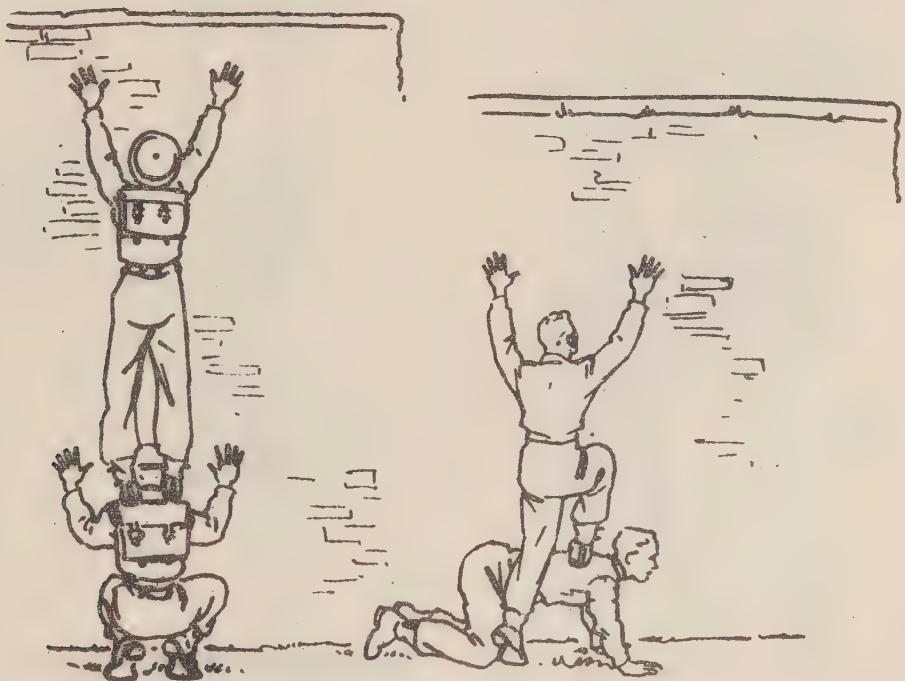
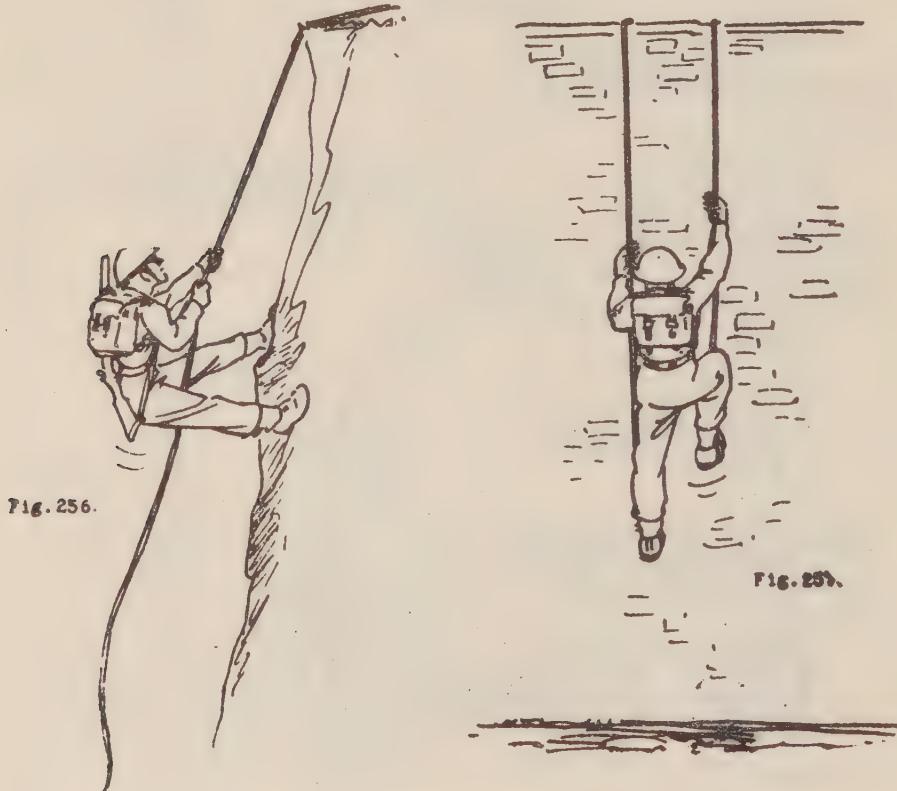
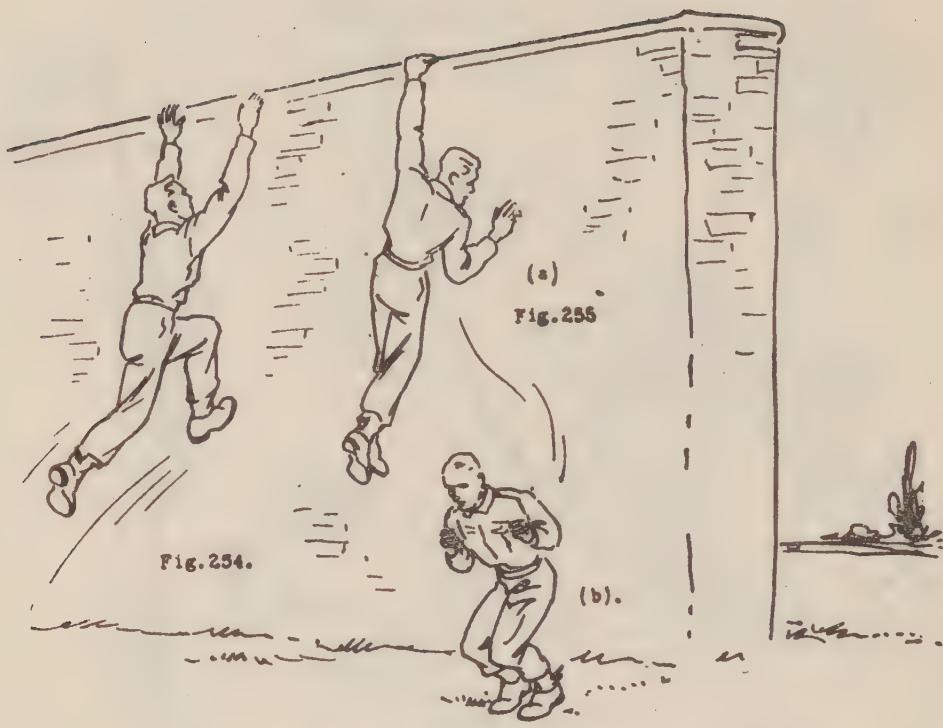


Fig. 252.

Fig. 253.



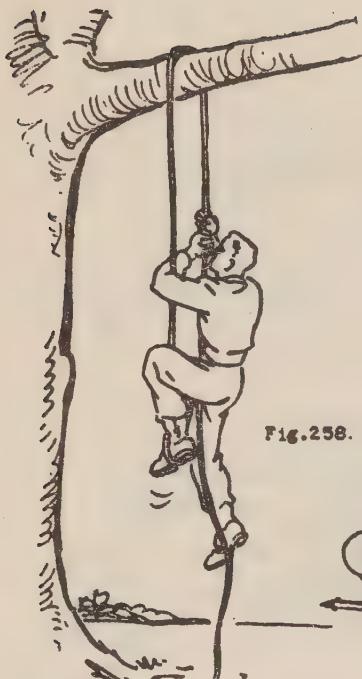


Fig. 258.

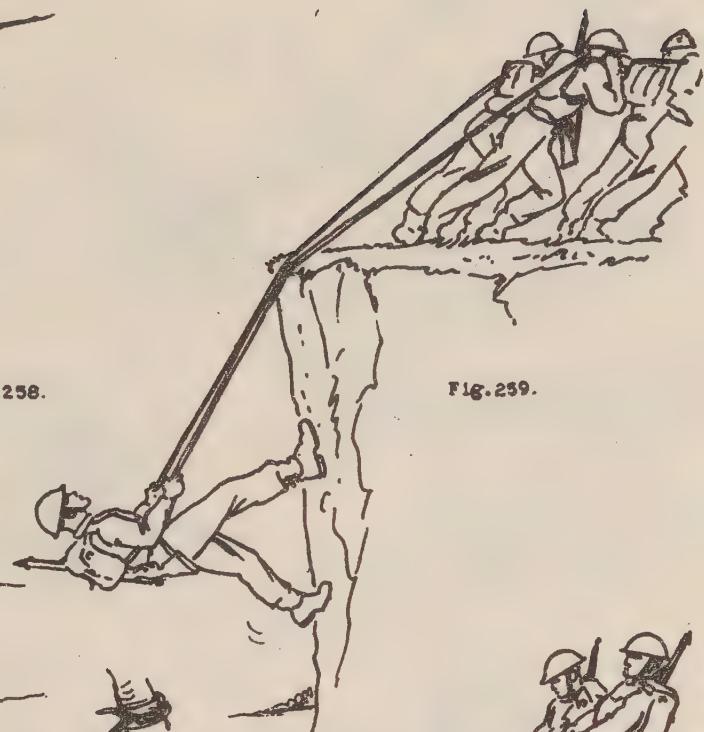


Fig. 259.

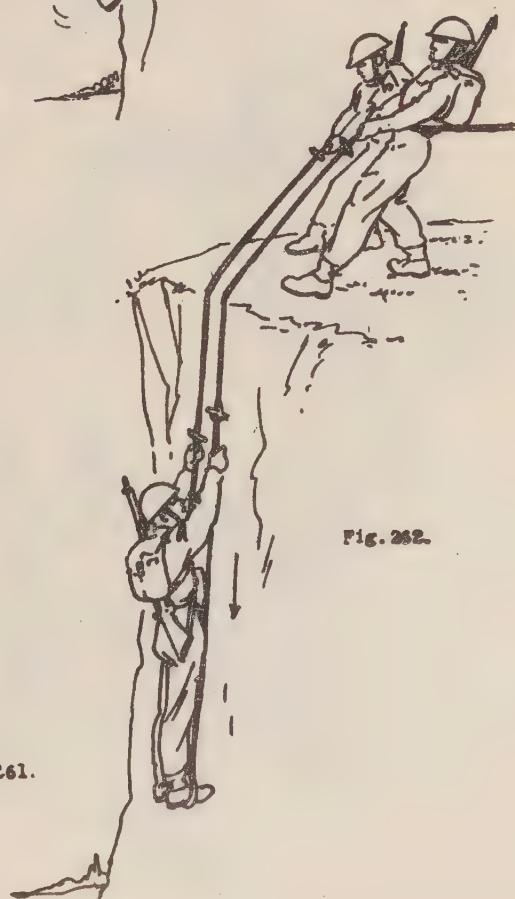
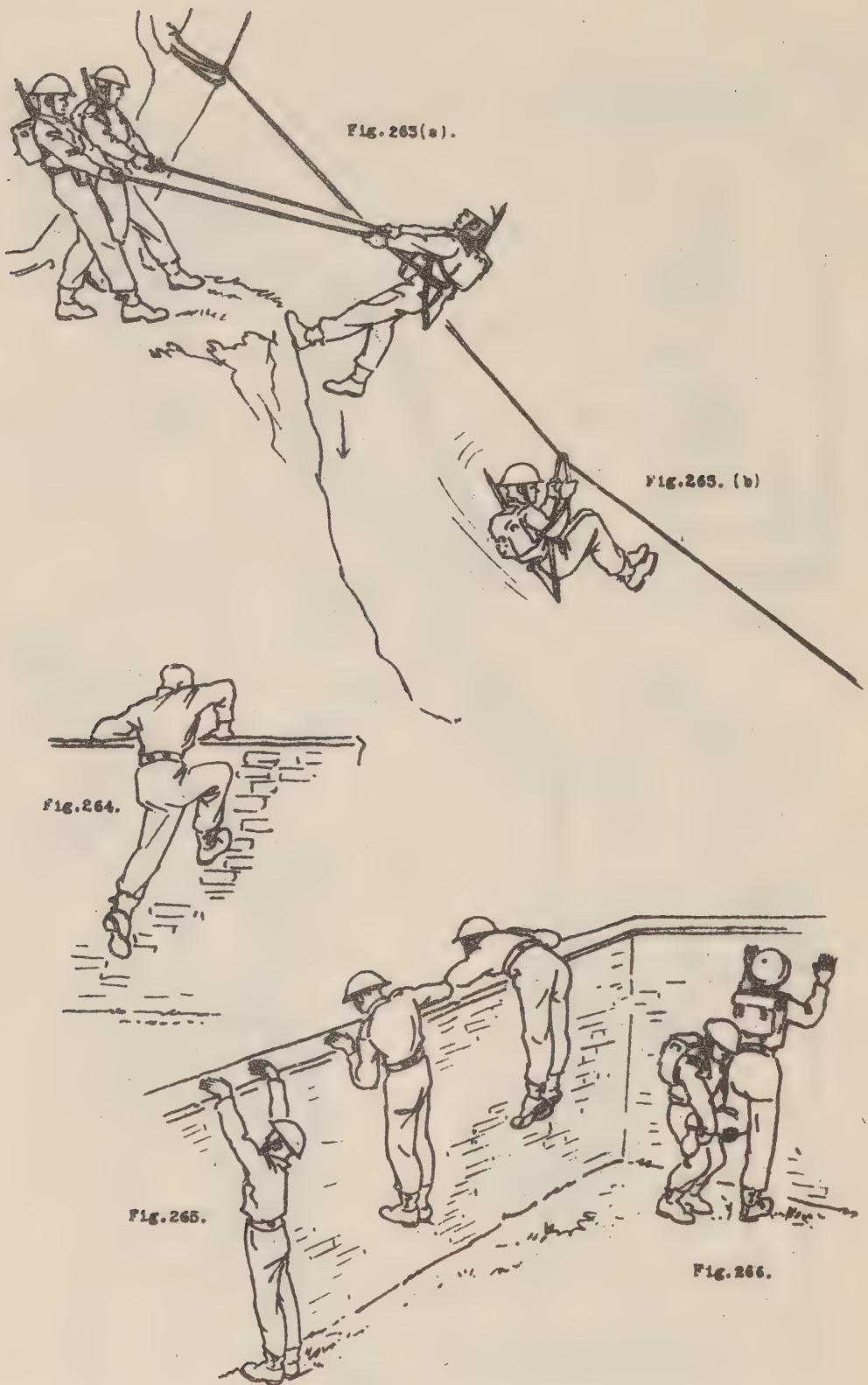
Fig.
260.

Fig. 261.

Fig. 262.



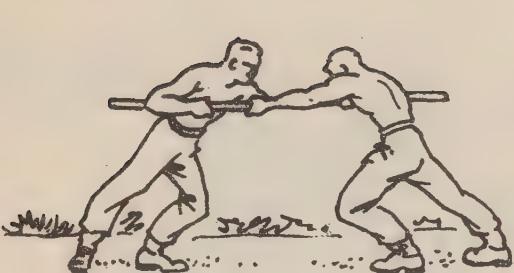


Fig. 267.

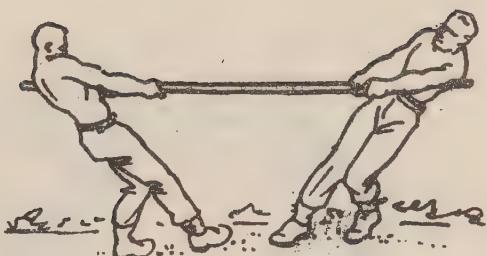


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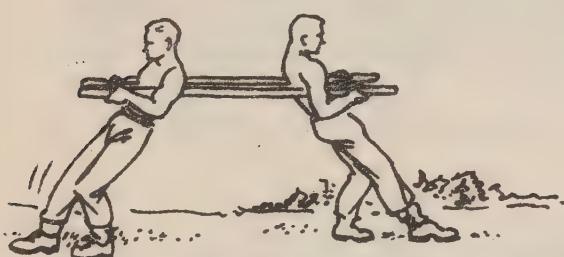


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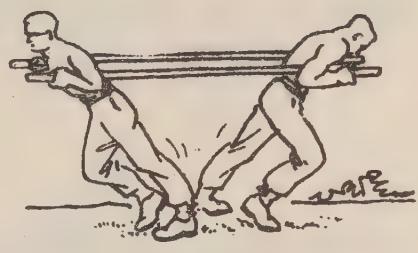


Fig. 270.

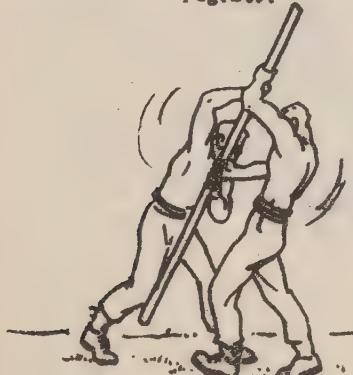


Fig. 271.

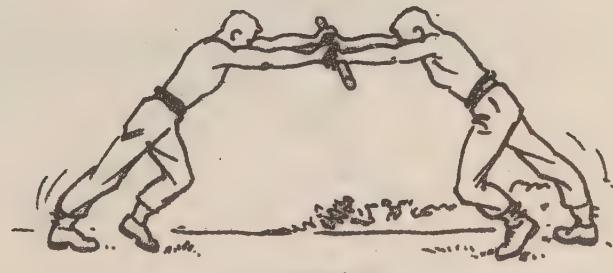


Fig. 272.



Fig. 273.

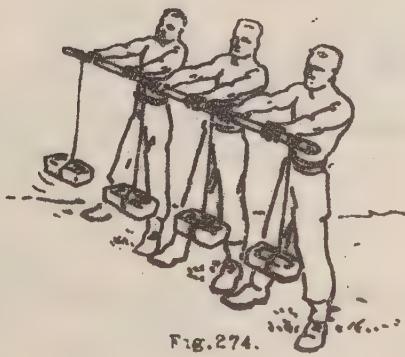


Fig. 274.



Fig. 275.

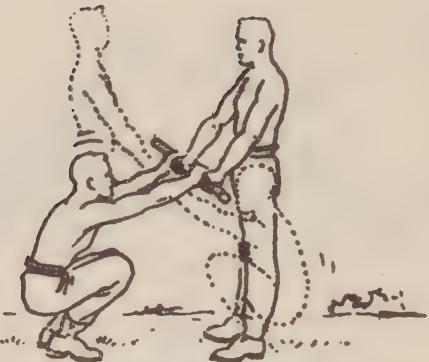


Fig. 276

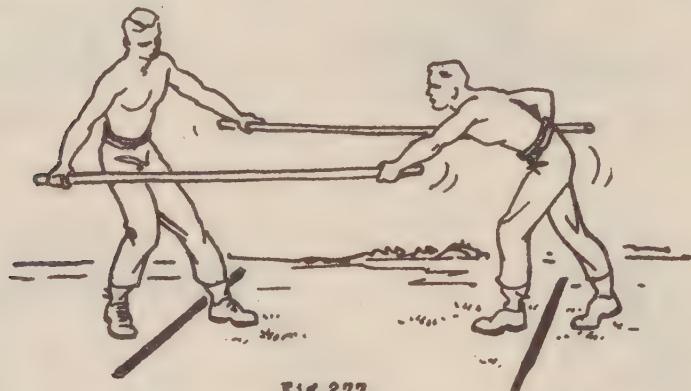


Fig. 277



Fig. 278.

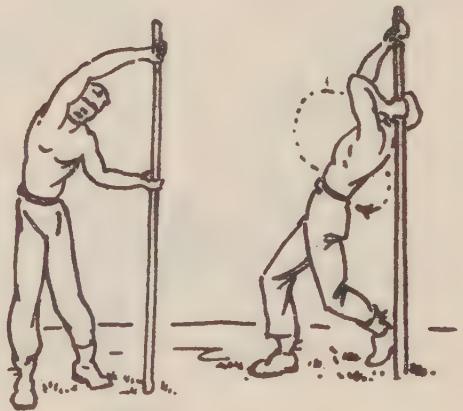


Fig. 279.

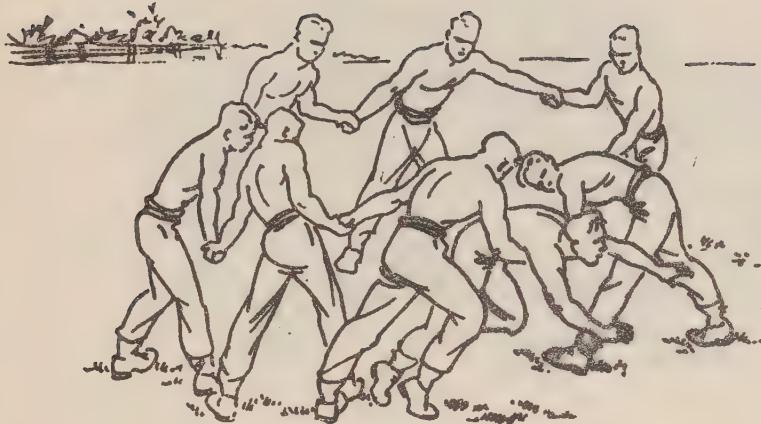


FIG. 280.

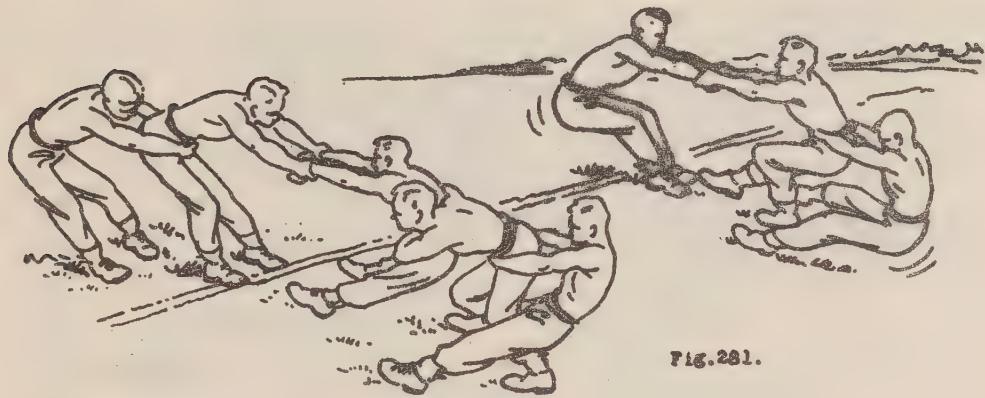


FIG. 281.

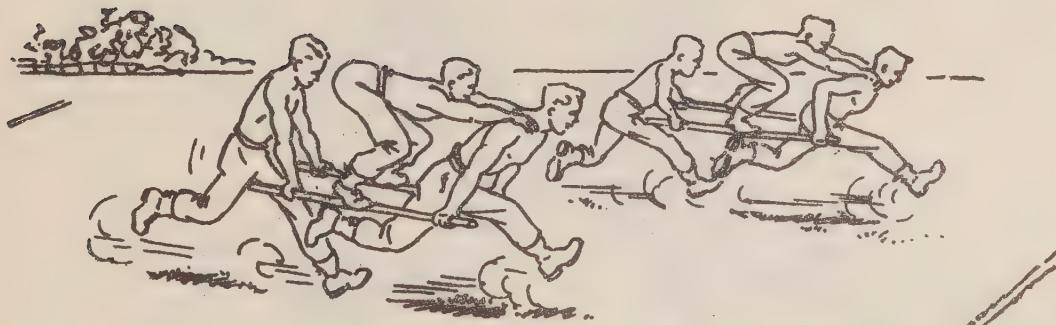


FIG. 282.

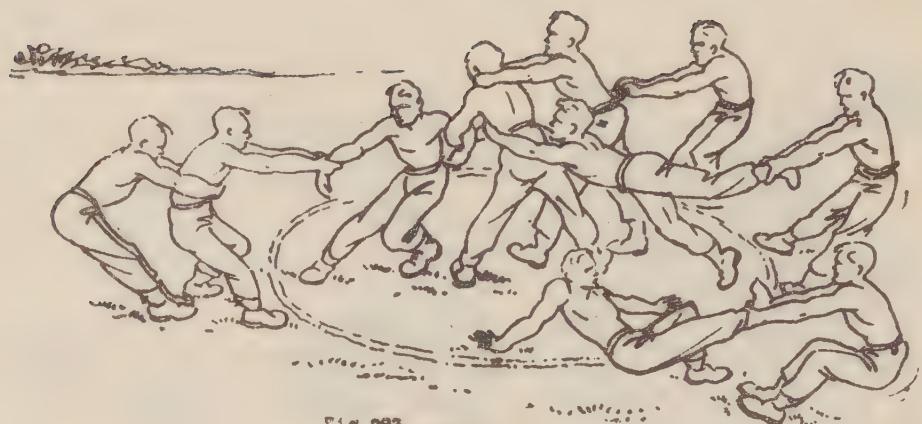


Fig. 283.

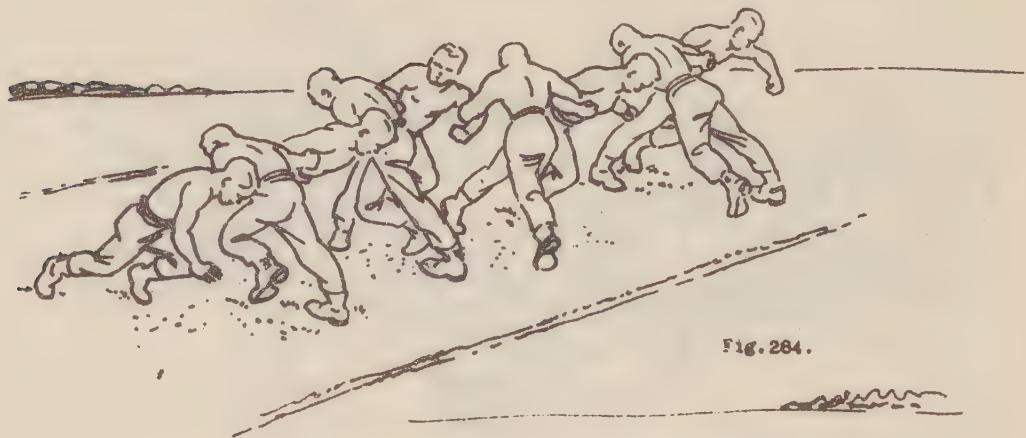


Fig. 284.

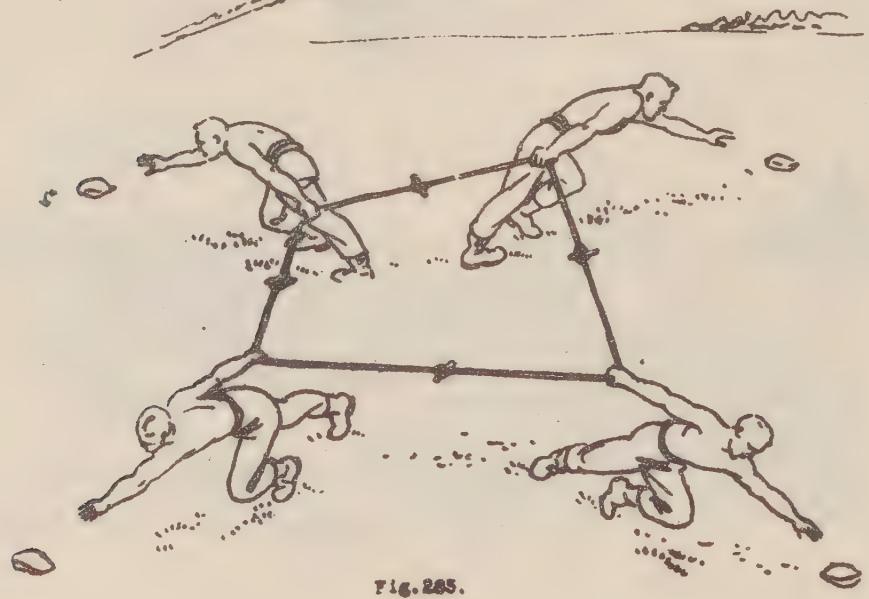


Fig. 285.

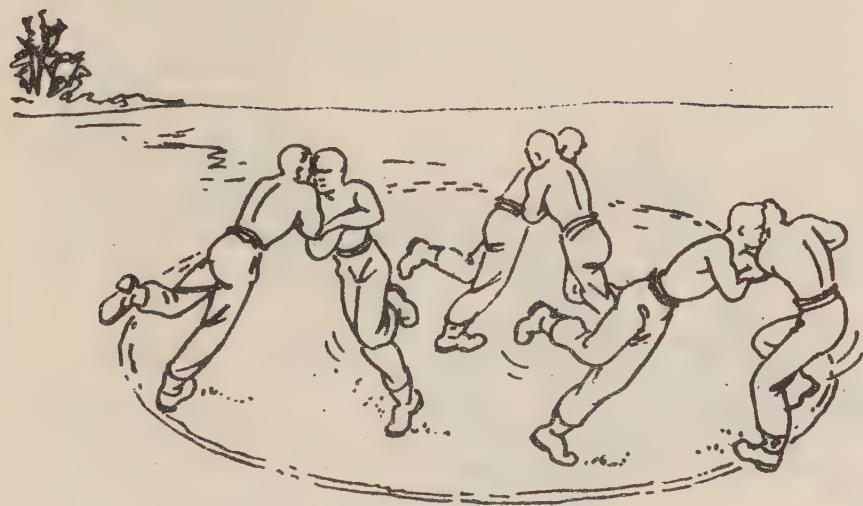


FIG. 286.



FIG. 287.



FIG. 288.



Fig. 289.



Fig. 290.



Fig. 291.

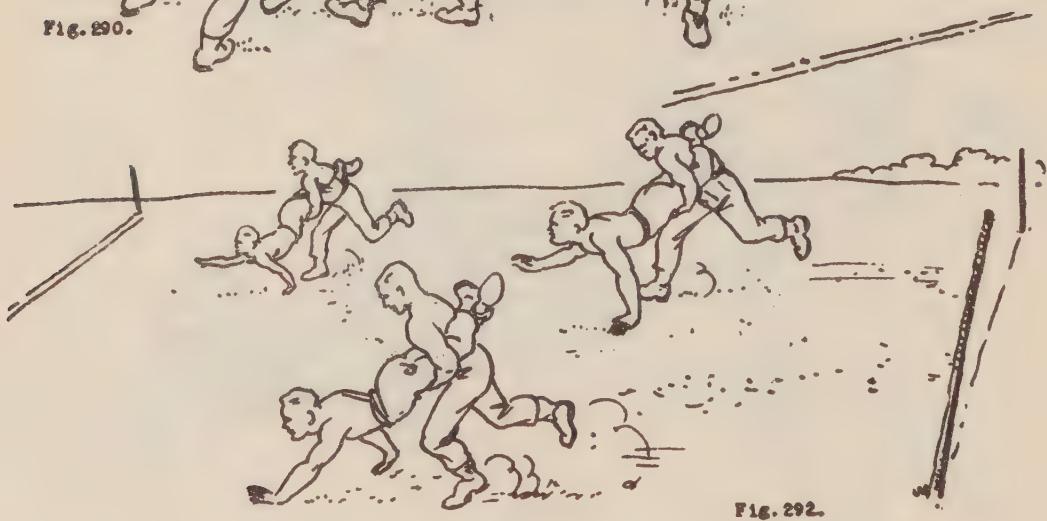


Fig. 292.

2. Endurance

- (a) Basic walking.
- (b) Basic running.
- (c) Scout pace.
- (d) Hill walking.
- (e) Road work.
- (f) Obstacle or assault course.
- (g) Cross-country walking.
- (h) Cross-country running.
- (i) Forced marching.

3. Agility, dexterity and speed

Agility (improvised apparatus made from barrack benches, logs or planks of wood supported on sandbags or oil drums, turf or sandbag box "horses", small oil drums or petrol cans, tubular scaffolding mats, and wooden gates and fences).

(a) Jumping. (See Pages 92 to 95.)

- (i) (High standing) Downward jump stepping off from one foot, gradually increasing height of apparatus (Fig 293).
- (ii) Running forward high jump, gradually increasing height of apparatus (Fig 294).
- (iii) Standing long jump over marked space, gradually increasing distance (Fig 295).
- (iv) Jumping the bag (Fig 296).
- (v) Running stride jump gradually increasing distance (Fig 297).
- (vi) High jumps off both feet over a series of low obstacles (Fig 298).
- (vii) Running long jump gradually increasing distance (Fig 299).
- (viii) Running window jump (Fig 300).
- (ix) Running forward high jump with high take-off (Fig 301).
- (x) Running fence and ditch jump (Fig 302).
- (xi) Double stride jump (Fig 303).
- (xii) Running oblique high jump (Fig 304).
- (xiii) (Side standing) Jumping over bench from side to side, with or without rebound, and travelling forward (Fig 305).
- (xiv) Stride jump from bench top to bench top (several parallel benches) (Fig 306).
- (xv) Running along improvised benches or low walls, jumping the gaps (Fig 307).
- (xvi) Running along improvised walls and jumping up and down to different levels (Fig 308).
- (xvii) Running jumps over a series of obstacles at different heights and placed at irregular intervals apart (Fig 309).
- (xviii) Running stride or long jumps over "widening stream" (Fig 310).

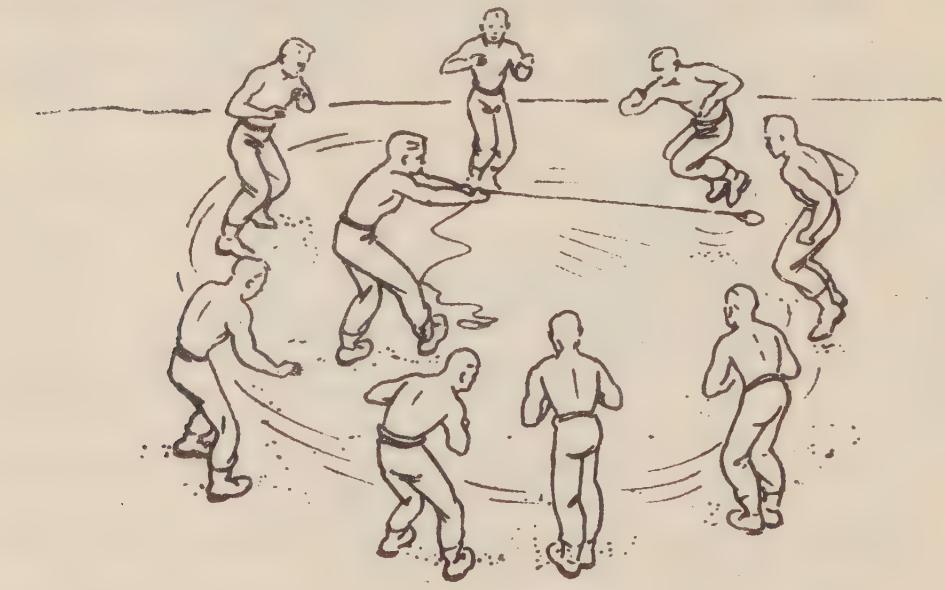
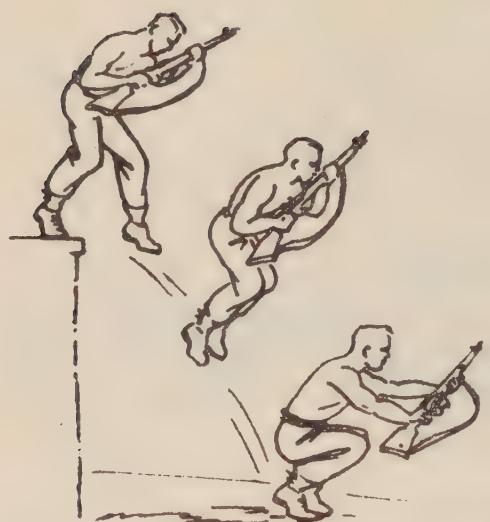




Fig. 297.

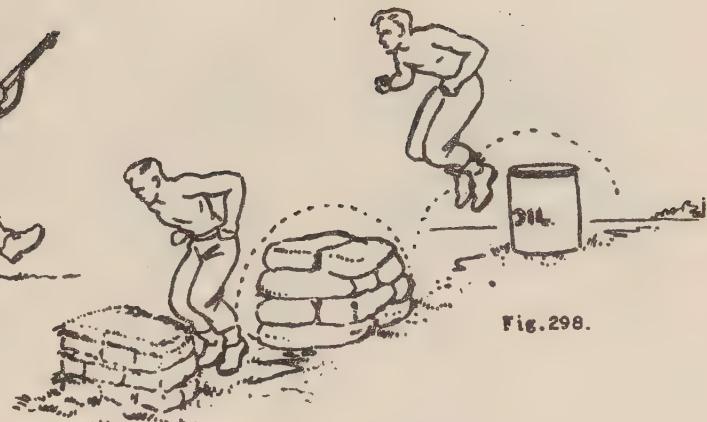


Fig. 298.

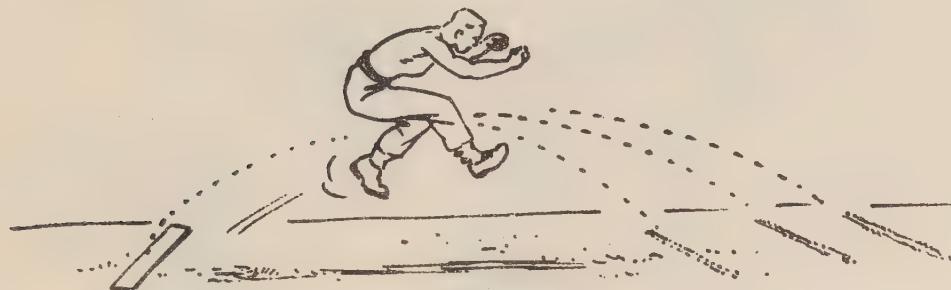


Fig. 299.

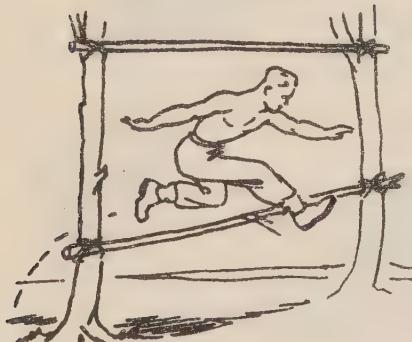


Fig. 300.



Fig. 301.



Fig. 302

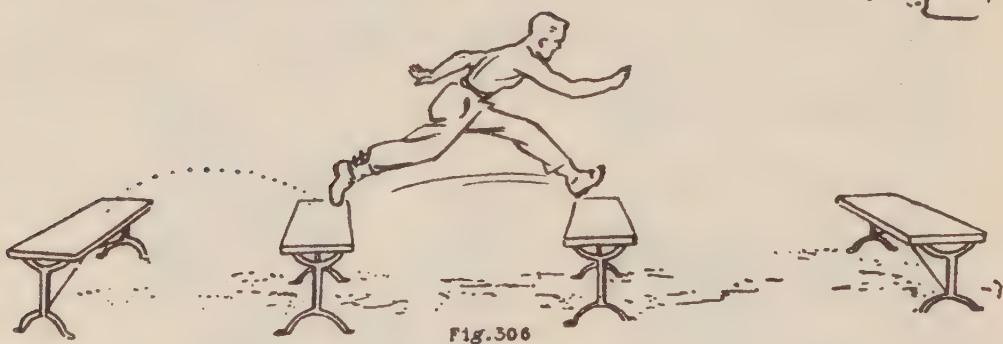
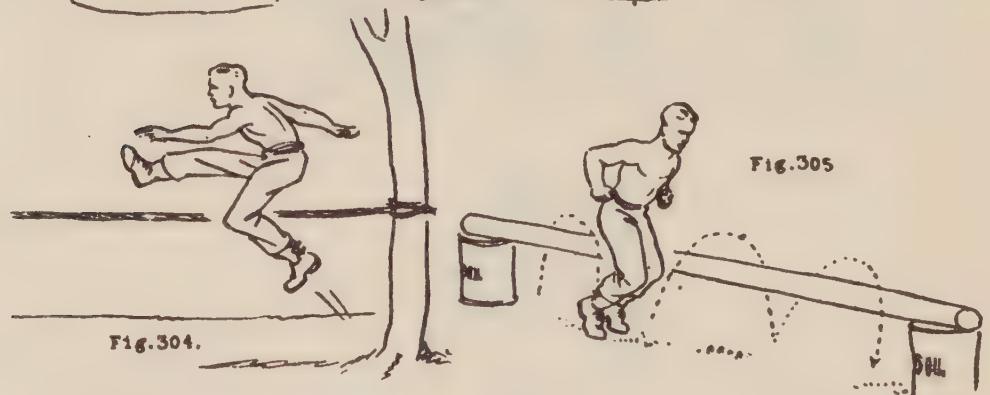
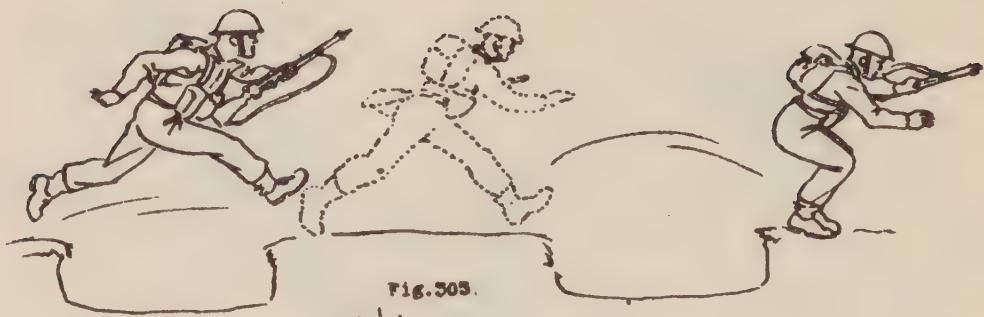




Fig. 308.

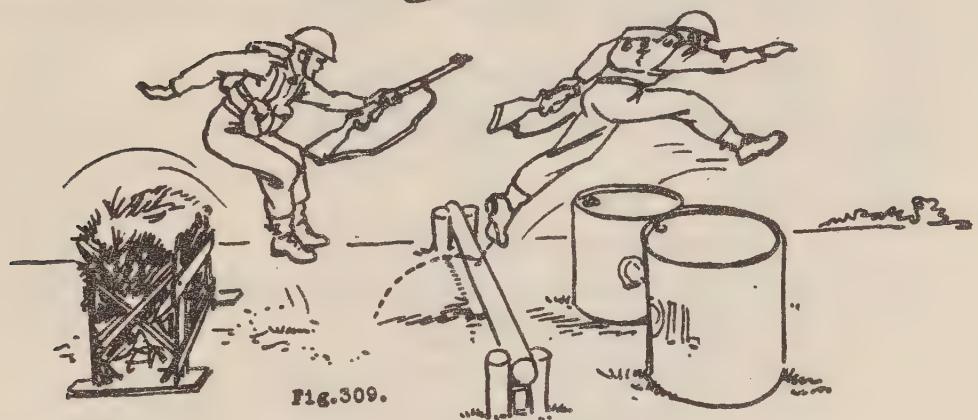


Fig. 309.



Fig. 310.

(b) *Vaulting.* (See Pages 97, 98 and 99.)

- (i) (Side standing, one leg backward) Oblique back vault (Fig 311).
- (ii) Knee-spring (Fig 312).
- (iii) Running vault with foot assisting (Fig 313).
- (iv) Running through vault (Fig 314).
- (v) Running face vault with bent knees (Fig 315).
- (vi) Running cat-spring with astride or through vault off (Figs 316 and 317).
- (vii) Running astride vault (Fig 318).
- (viii) Running horizontal astride vault (Fig 319).
- (ix) Running horizontal through vault (Fig 320).
- (x) Running gate vault (Fig 321).
- (xi) Running oblique back vault (Fig 322).
- (xii) Running side vault (Fig 323).
- (xiii) Running through vault with one leg leading (Fig 324).
- (xiv) Forward heave vault (Fig 325).
- (xv) Heave vault using stick (Fig 326).

(c) *Groundwork.* (See Page 99.)

- (i) Forward roll (Fig 327).
- (ii) Two or more consecutive forward rolls.
- (iii) Backward roll (Fig 328).
- (iv) Forward roll followed by backward roll.
- (v) Dive forward roll (Fig 329).
- (vi) Hand-standing in pairs, supporter grasping performer's hips (Fig 330).
- (vii) Hand-standing in pairs, supporter grasping performer's ankles (Fig 331).
- (viii) Hand-standing against wall (Fig 332).
- (ix) Hand-standing without support, and later, free practice of hand-walking with or without assistance (Fig 333).
- (x) Cartwheel (Fig 334).
- (xi) Cartwheel followed by forward roll.

(d) *Individual fieldcraft movements.* (See Page 100.)

- (i) Freezing (Fig 335).
- (ii) Running—going to ground (Fig 336).
- (iii) Blind man (Fig 337).
- (iv) The leopard crawl, with and without arms (Figs 338 and 339).
- (v) The roll, with and without arms (Figs 340 and 341).
- (vi) The hands and knees crawl, with and without arms (Figs 342 (a) and 342 (b)).

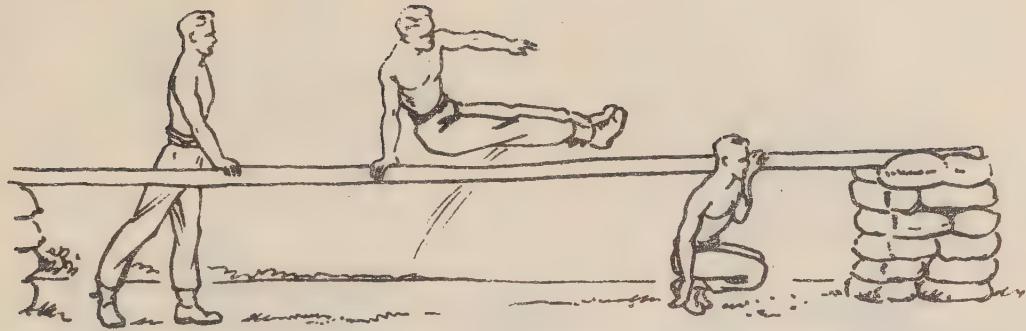


Fig. 311.

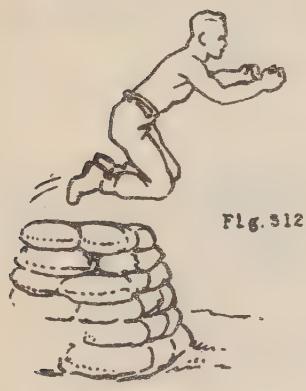


Fig. 312.

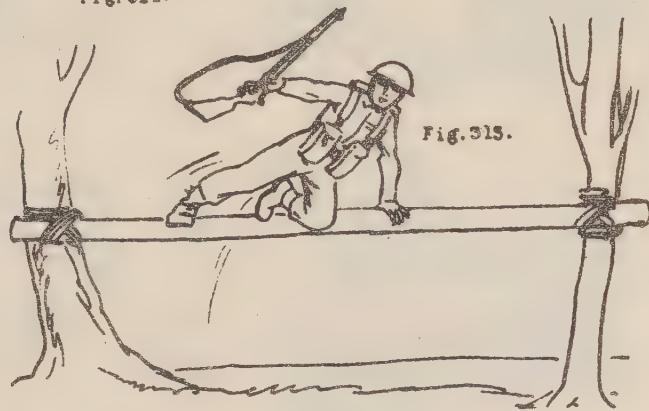


Fig. 313.

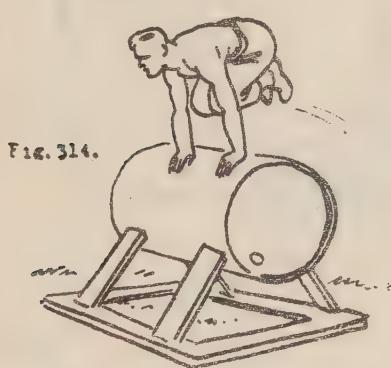


Fig. 314.



Fig. 315.

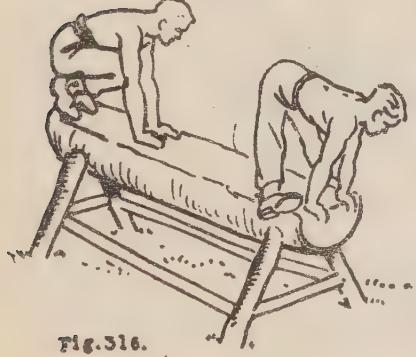


Fig. 316.

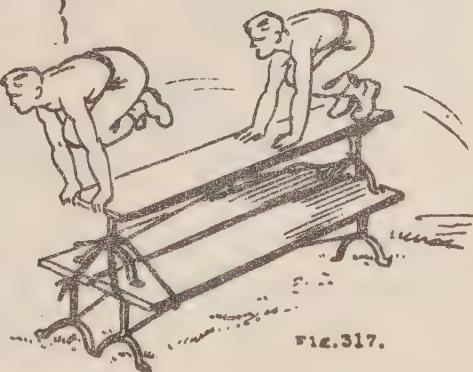


Fig. 317.



Fig. 318.

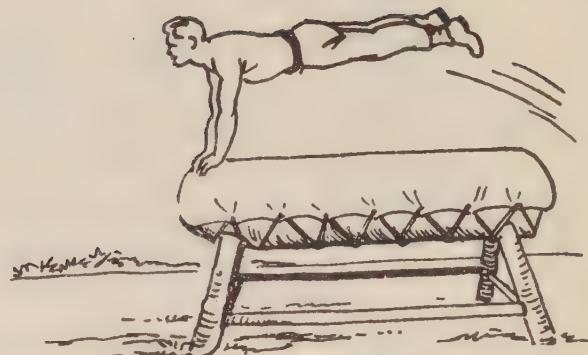


Fig. 319.

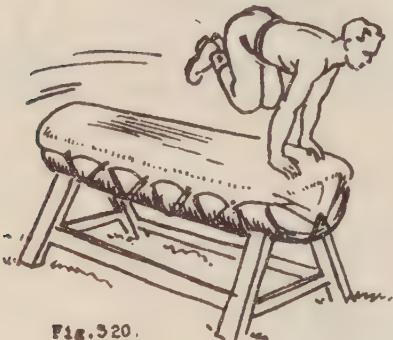


Fig. 320.

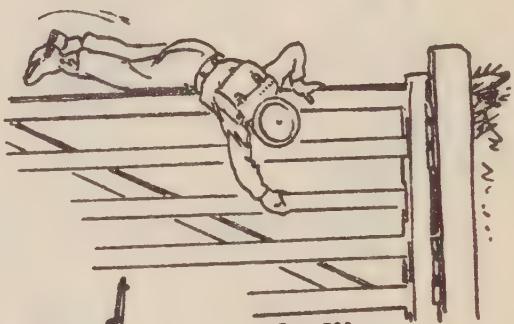


Fig. 321.

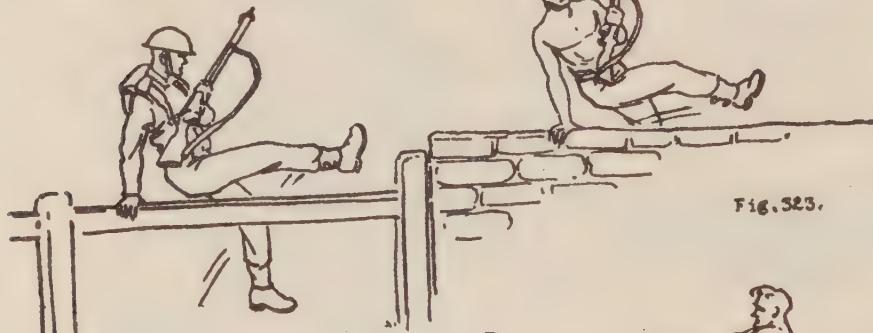


Fig. 322.

Fig. 323.



Fig. 324.

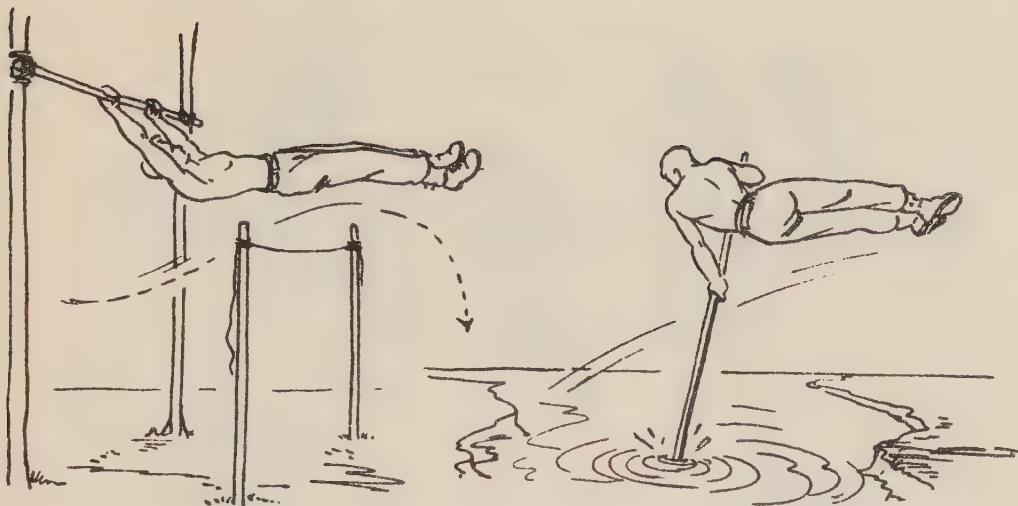


Fig. 325.

Fig. 326.



Fig. 327.

Fig. 328.

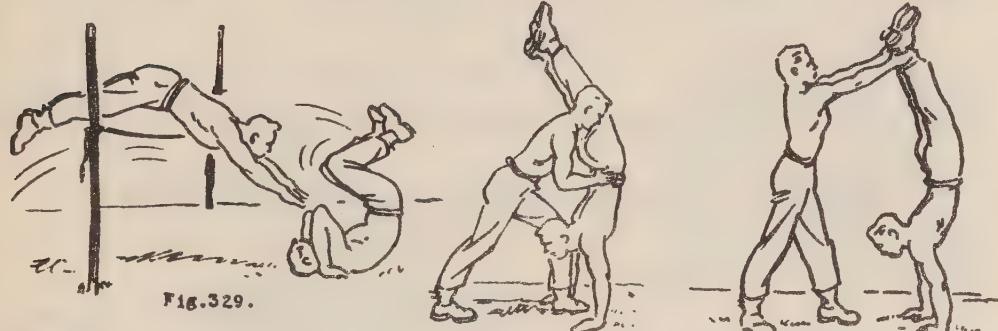


Fig. 329.

Fig. 330.

Fig. 331.

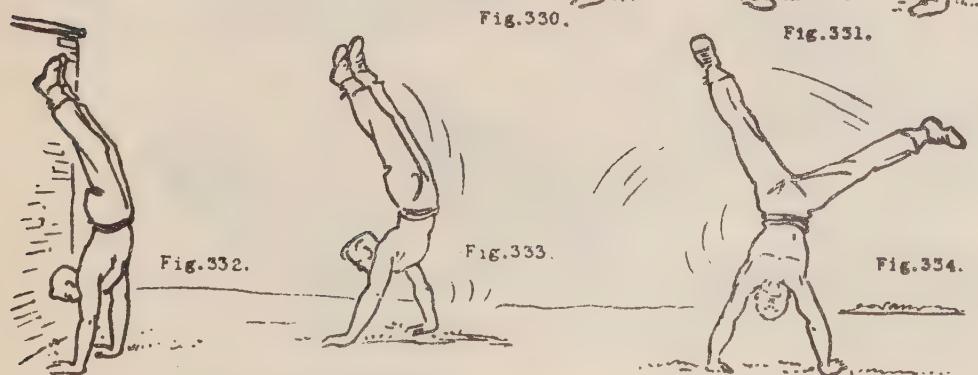
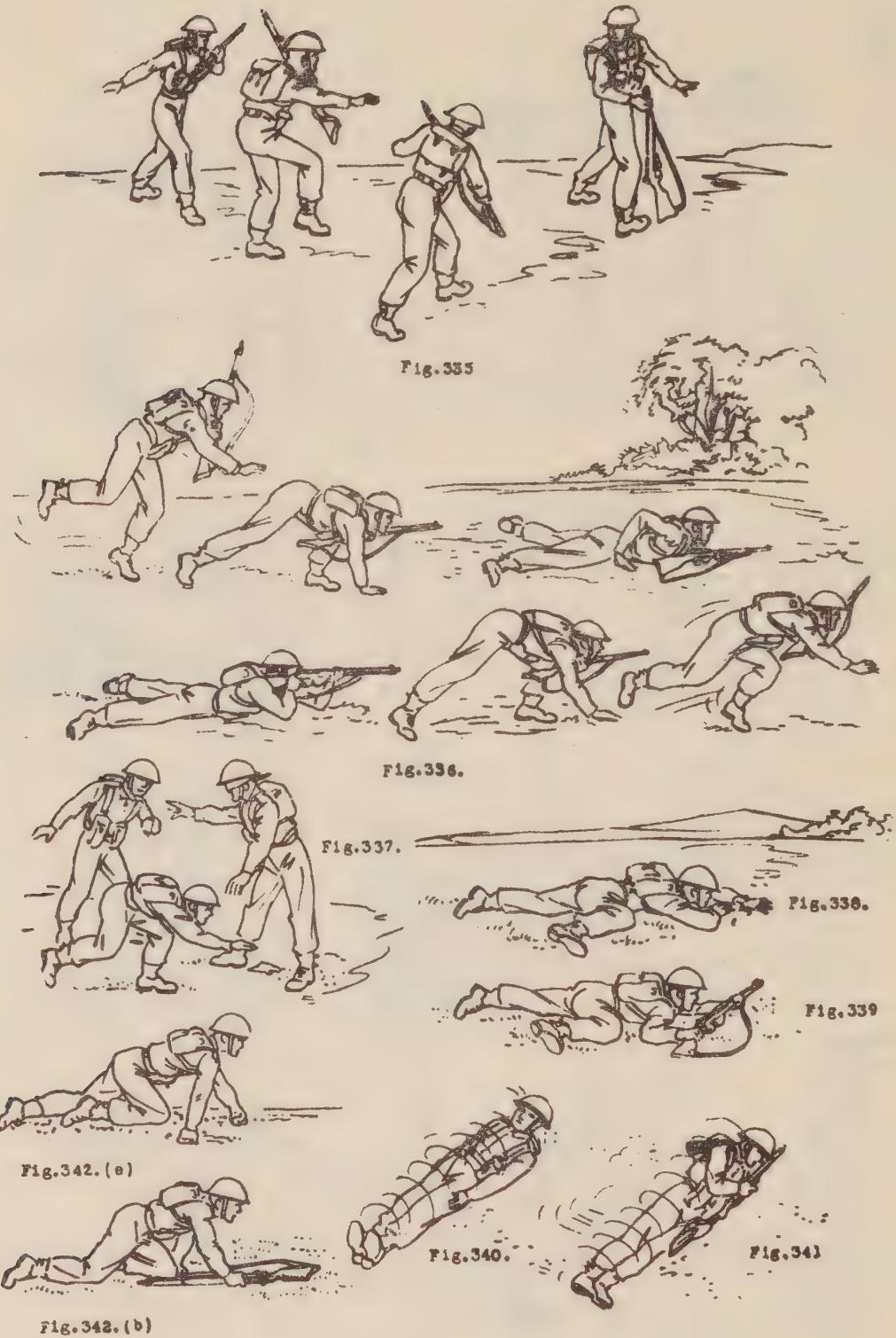


Fig. 332.

Fig. 333.

Fig. 334.



(e) *Surmounting obstacles.**Indoor obstacle course. (See Page 102.)*

- (i) Clear vaults, and vaults with foot assisting.
- (ii) Rolling over obstacles.
- (iii) Balance walking.
- (iv) Climbing.
- (v) Swinging from obstacle to obstacle by means of a rope.
- (vi) High, stride and long jumping.
- (vii) Crawling.
- (viii) Scaling.

An example of an indoor obstacle course is given in Fig 343.

Outdoor obstacle course. (See Pages 103 and 104.)

- (i) Balance walking along planks, logs or wall tops.
- (ii) Scaling walls, anti-tank ditches, cliffs or quarries.
- (iii) Crawling and fieldcraft movements.
- (iv) Climbing vertical or inclined ropes, rope ladders, or drain pipes.
- (v) Toggle rope work.
- (vi) Jumping ditches of varying widths between 3 ft and 9 ft.
- (vii) Jumping or vaulting fences.
- (viii) Crossing gaps.
- (ix) Rolling over gates.
- (x) Rolling over, crawling or bursting through hedges.
- (xi) Jumping down from ramps.
- (xii) Crossing heaped rubble or walking on shingle.
- (xiii) Forcing a way through closely wooded country, and through undergrowth.
- (xiv) Crossing stepping stones.
- (xv) Walking and running up and down steep slopes.
- (xvi) Tree climbing.
- (xvii) Wading through rivers or streams.
- (xviii) Crossing wire entanglements and trip wires.

Examples of outdoor obstacle courses are given in Figs 344 and 345.

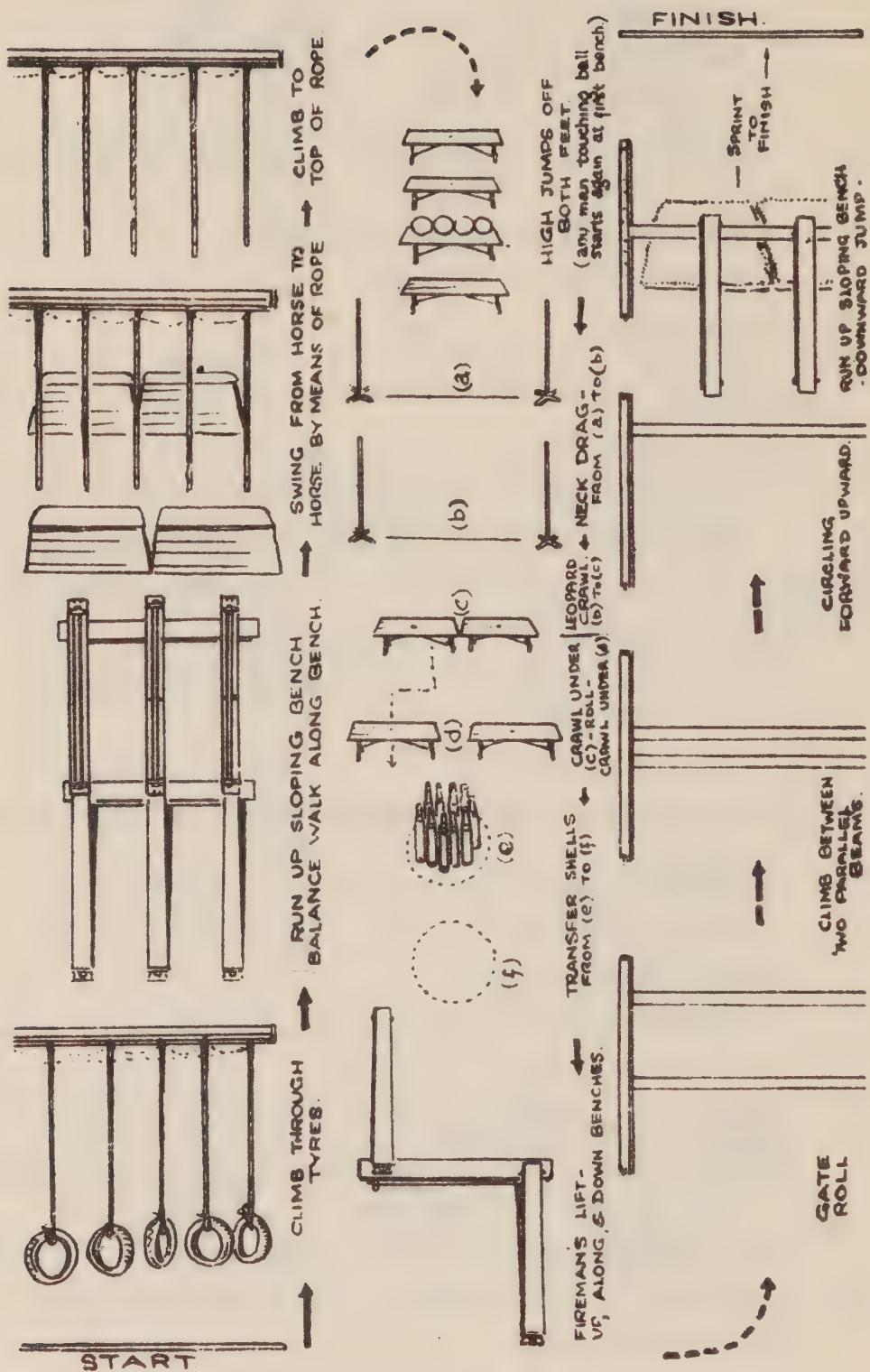
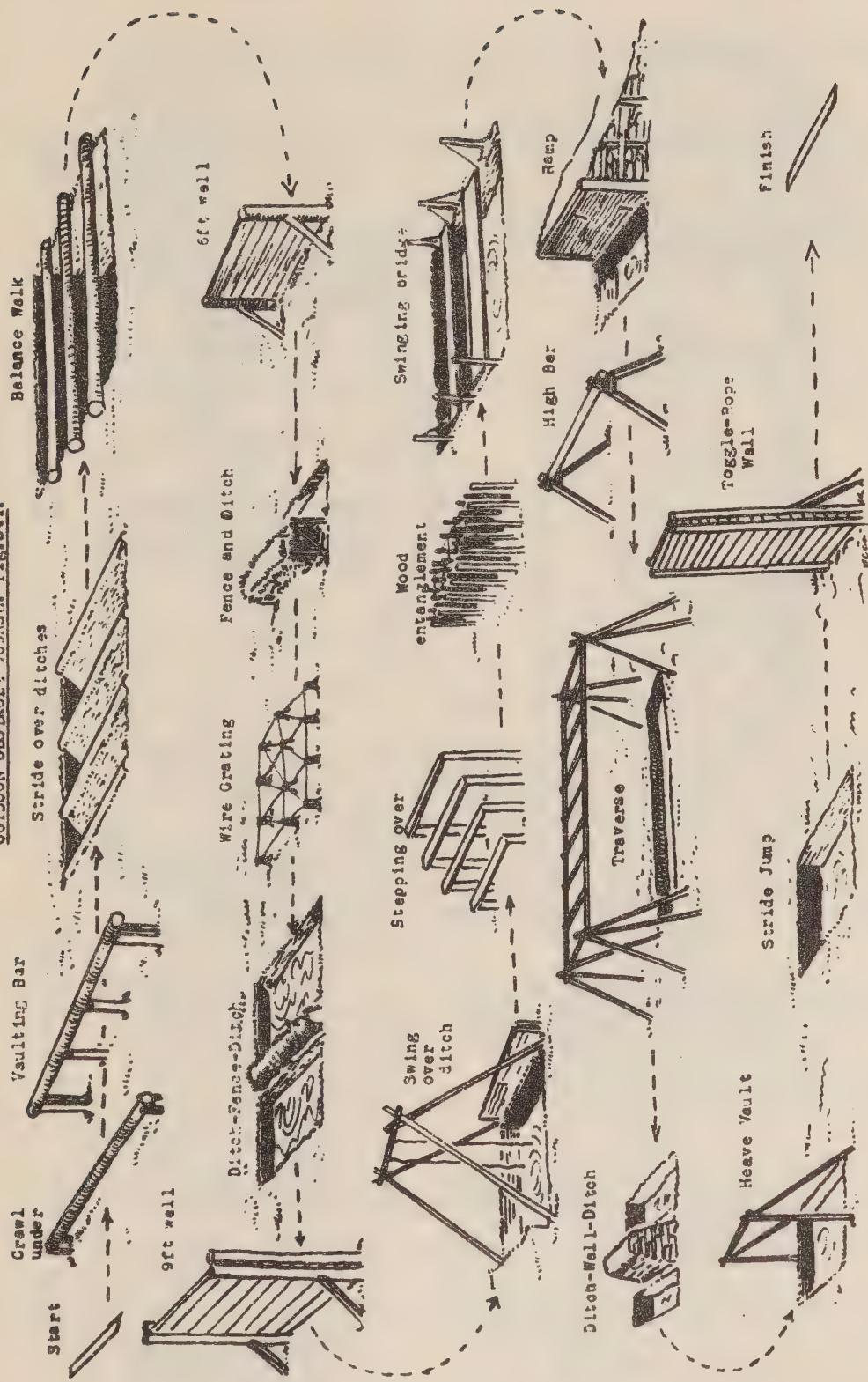


Fig. 343.

OUTDOOR OBSTACLE COURSE, FIG. 34.



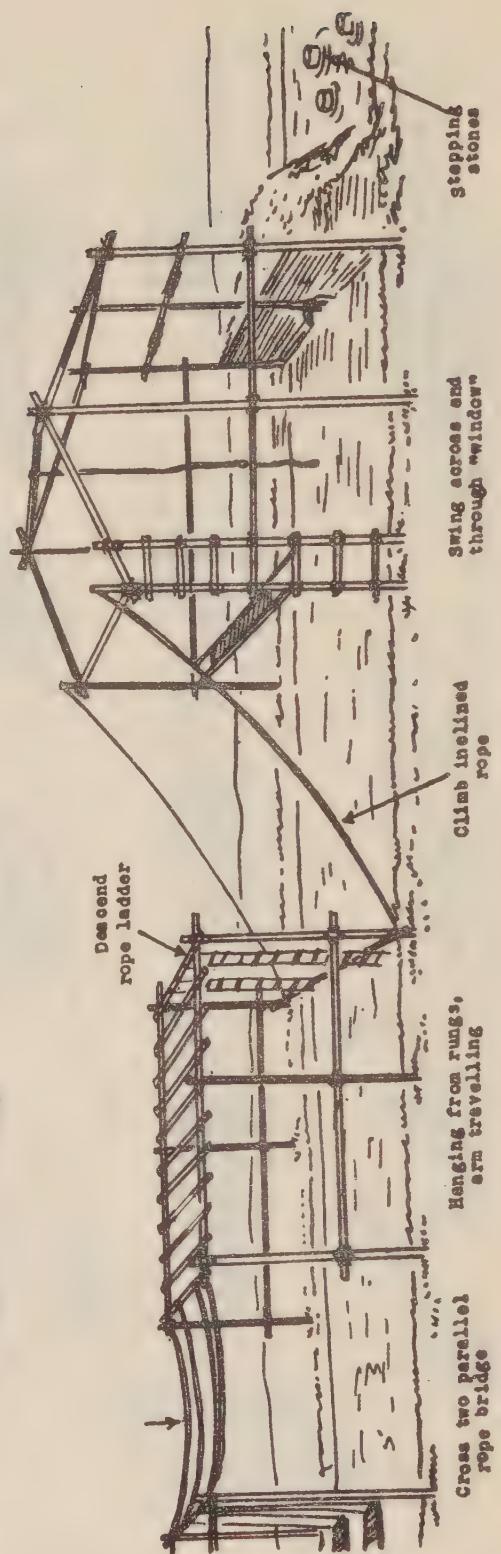
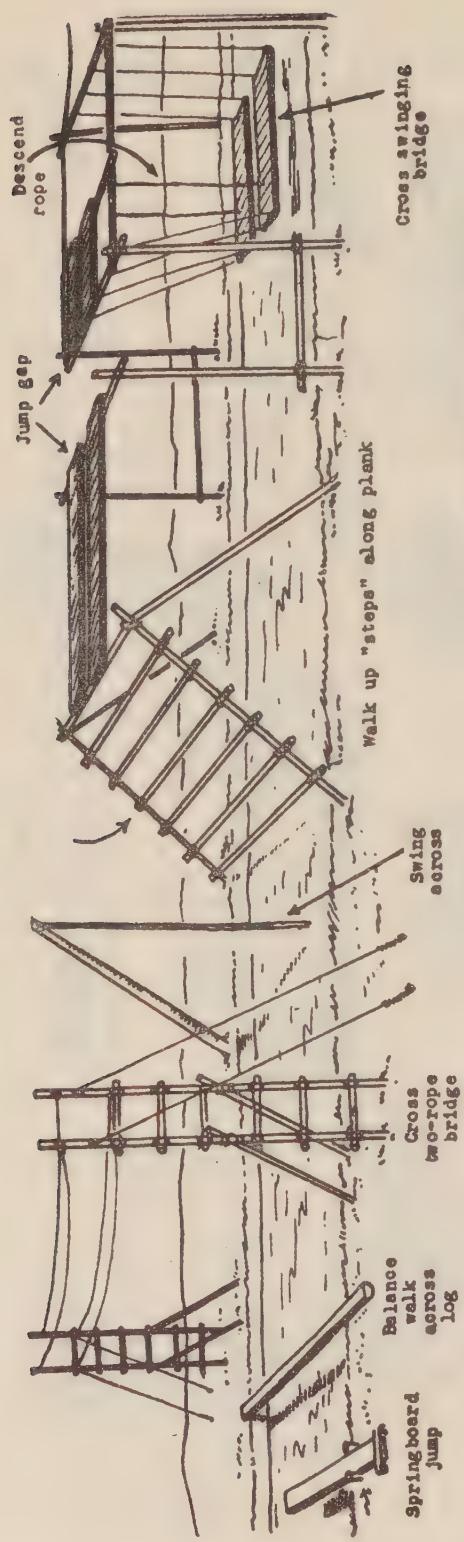


Fig. 345.

(f) *Rapid dispersal from moving vehicles.* (See Page 106.)

- (i) Jumping downward from stationary vehicle (Fig 346).
- (ii) Running length of stationary vehicle and jumping downward from rear end.
- (iii) Jumping from vehicle moving at a speed of 3-6 mph (Fig 347).
- (iv) Rapid dispersal from vehicle moving at a speed of 7-10 mph (gradually increasing to 11-15 mph) (Fig 348).

(g) *Potted sports.*

- (i) Athletic events.
- (ii) Military events.
- (iii) Gymkhana events.

Dexterity.

(a) *Balancing.* (See Pages 106 and 107.)

- (i) Walking forward (apparatus at about shoulder-height) (Fig 349). Later, carrying live and dead weights along balancing apparatus (Fig 350).
- (ii) Stepping from one piece of improvised balancing apparatus to another placed at irregular distances apart (Fig 351).
- (iii) Walking up and down "stairs" placed at irregular distances apart (Fig 352).
- (iv) Cat walk along log or similar improvised apparatus (Fig 353).
- (v) Walking up and down sloping apparatus (Fig 354).
- (vi) Cat walk up and down sloping apparatus (Fig 355).
- (vii) Running along balancing apparatus, jumping gaps (Fig 356).
- (viii) Walking along apparatus at gradually increasing heights (Fig 357).
- (ix) Walking on "confidence plank" and stepping over, or jumping across gaps (Fig 358).

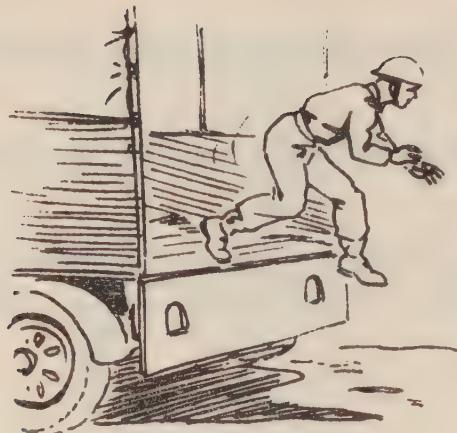


Fig. 346.

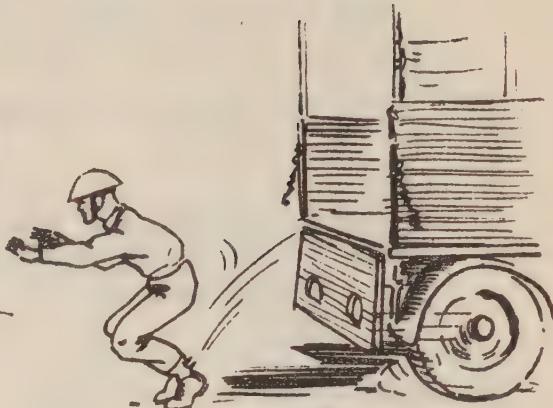


Fig. 347.

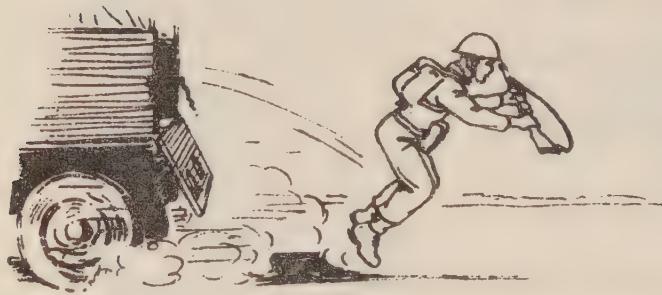


Fig. 348.

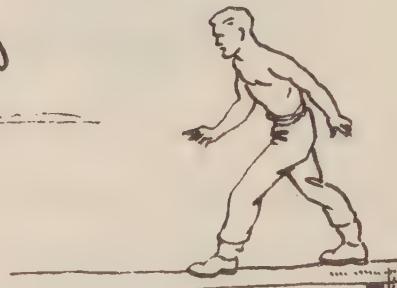


Fig. 349.



Fig. 350.



Fig. 351.

Fig. 352.

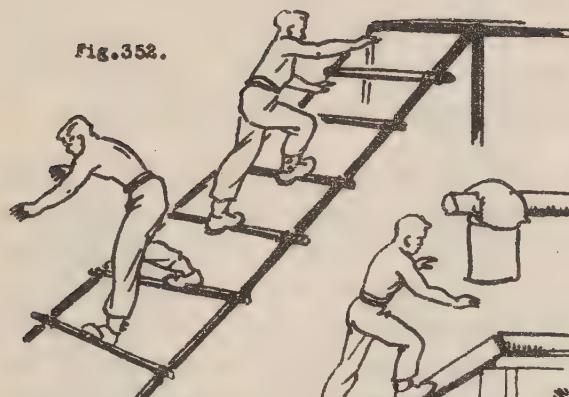


Fig. 353.

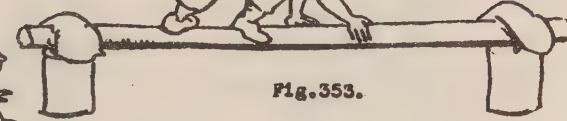


Fig. 354.

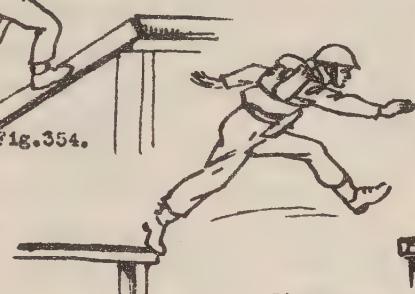


Fig. 355.

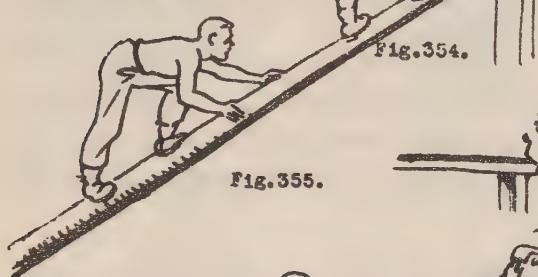


Fig. 356.

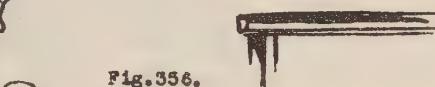


Fig. 357.

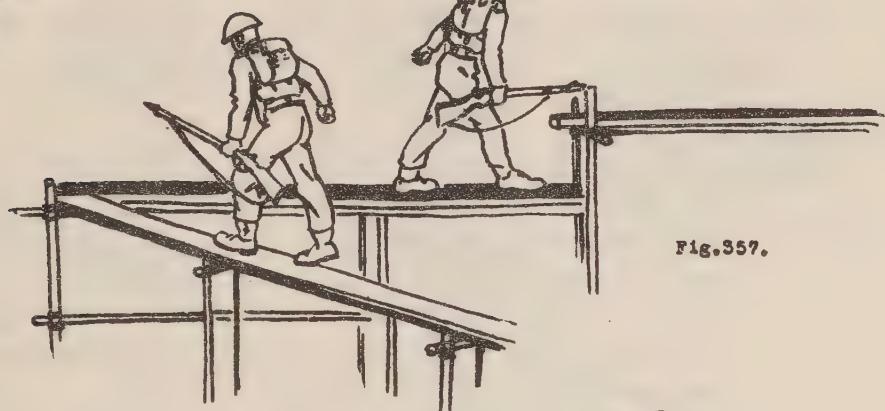
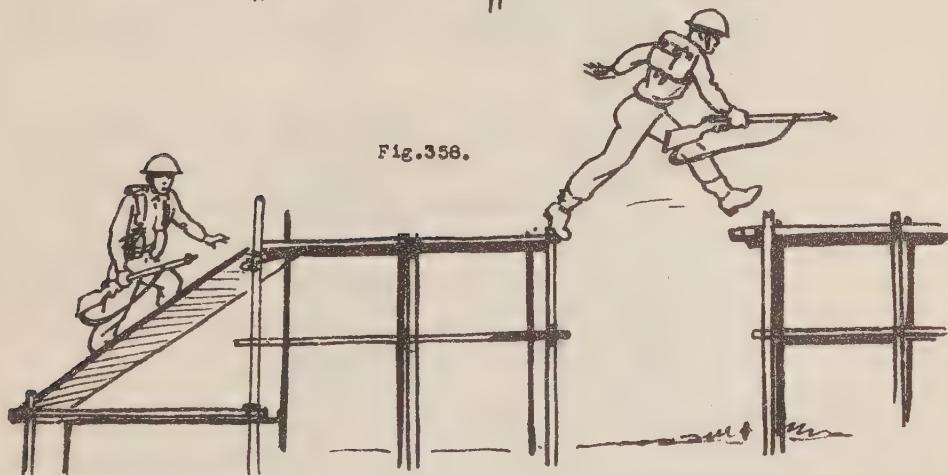


Fig. 358.



(b) *Pick and shovel exercises.* (See Pages 109, 111, 112, 114, 116 and 117.)

- (i) *Ready position for exercises with the pick.*—Astride, arms downward, palm of right hand and back of left hand facing front, pick head to the right, left hand at the small end of the helve and right hand about 4 ins from the pick head (Fig 359).
- (ii) *Raised position for exercises with the pick.*—From the ready position take a short pace forward with the right foot, turning the left foot out slightly, body weight evenly balanced on both feet. Raise the pick above the right shoulder with the upper arm parallel to the ground and the centre of the pick directly over the right shoulder (Fig 360).
- (iii) *Ready position for exercises with the shovel.*—Astride, arms downward, right hand on "T" with thumb round, left hand grasping bend of shovel, palm up, left foot turned slightly to left, body turned to left (Fig 361).
- (iv) *Pick and shovel drill.*—Falling in with tools (Fig 362 (a)); turning with tools (Fig 362 (b)); grounding tools (Fig 362 (c)).
- (v) (Ready position—pick) With the right hand raise the pick slowly to the vertical position in front of the body and, at the same time, slide the right hand down the helve until it touches the left hand. After a slight pause lower the pick to the ready position. The hand must remain in contact with the helve throughout. Repeat the exercise several times before changing to the opposite side (Fig 363).
- (vi) (Ready position—pick) Relax the right hand grip and allow the pick to swing slowly downward past the legs and sideways-upward to the raised position over the left shoulder. The position of the hands is changed during the swing by sliding them along the helve. The exercise is repeated from side to side (Fig 364).
- (vii) (Ready position—pick) Point the pick to the front by slowly raising the arms forward to shoulder-height and sliding the right hand down the helve until it touches the left hand. After a pause return to the ready position. Repeat the exercise several times before changing to the opposite side (Fig 365).

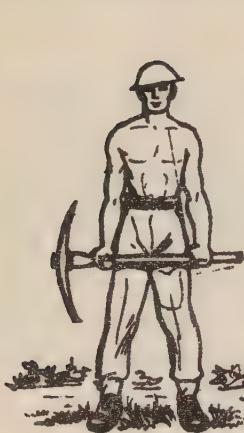


Fig.359.



Fig.360.



Fig.361.

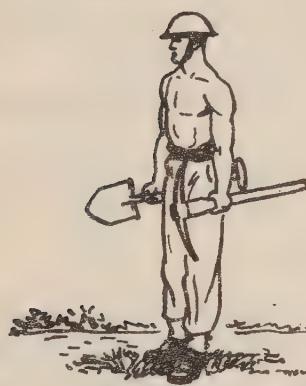


Fig.362(a).



Fig.362(b).



Fig.362(c).

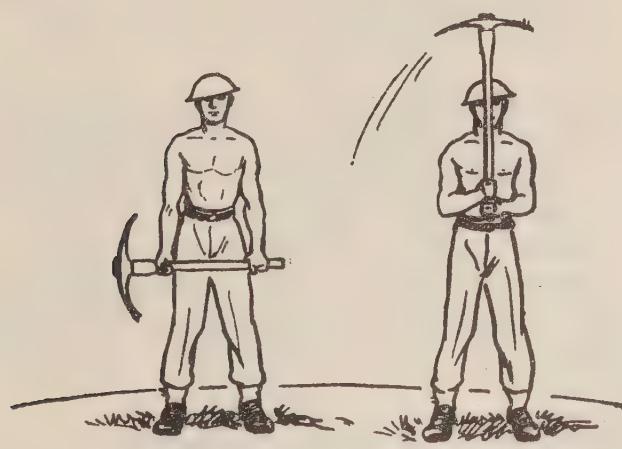


Fig.363.

(viii) (Ready position—pick) Turn the trunk to the right and swing the pick to the raised position over the right shoulder, and without a pause return to the ready position. Repeat the exercise several times before changing to the opposite side. The position of the hands does not change during the swinging movement (Fig 366).

(ix) (Ready position—shovel) Bend the knees slightly and swing the shovel backward with weight of body on right foot, left arm straight and left hand near right knee (Fig 367 (a)) ; swing body and shovel forward as if filling the shovel, bending the left knee and the weight of the body behind the thrust (Fig 367 (b)) ; depress "T" piece of helve and return to ready position by straightening the back and the knees (Fig 367 (c)).

(x) (Ready position—shovel) Slide the left hand down the helve and point the shovel forward, with straight arms raised to shoulder-height. After a slight pause return to the ready position. Repeat the exercise several times before changing to the opposite side (Fig 368).

NOTE.—Exercises (v) to (x) comprise Series I of pick and shovel exercises.

(xi) (Ready position—pick) With a rhythmical swing change the pick from side to side, passing through the vertical position in front of the face. The position of the hands is changed during the swing and the hands slide along the helve, maintaining contact with it throughout (Fig 369).

(xii) (Raised position—pick) Relax the right hand grip and slowly lower the pick until the head points forward and the helve is level with the shoulders, arms straight. After a slight pause, return to the raised position. Repeat the exercise several times before changing to the other shoulder. The left foot should be forward when the exercise is repeated from the left shoulder (Fig 370).

(xiii) (Ready position—pick) Point the pick to the right, turning the trunk to the right and raising the left heel. The trunk is turned and the heel is raised at the same time as the arms are raised in line with the shoulders. The pick should slide through the right hand until both hands are together near the end of the helve (Fig 371).



Fig. 364.

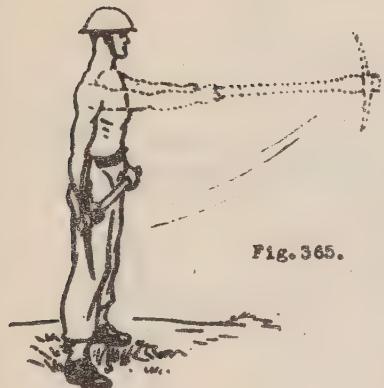


Fig. 365.

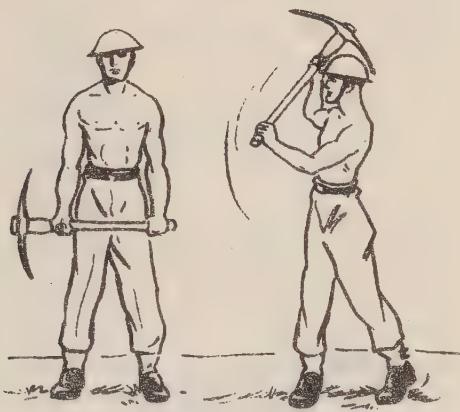
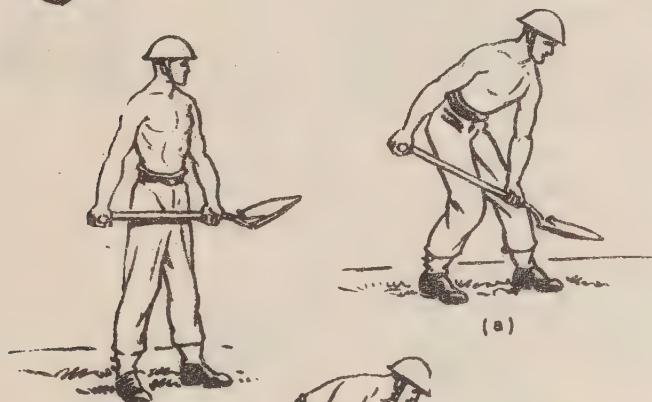


Fig. 366.



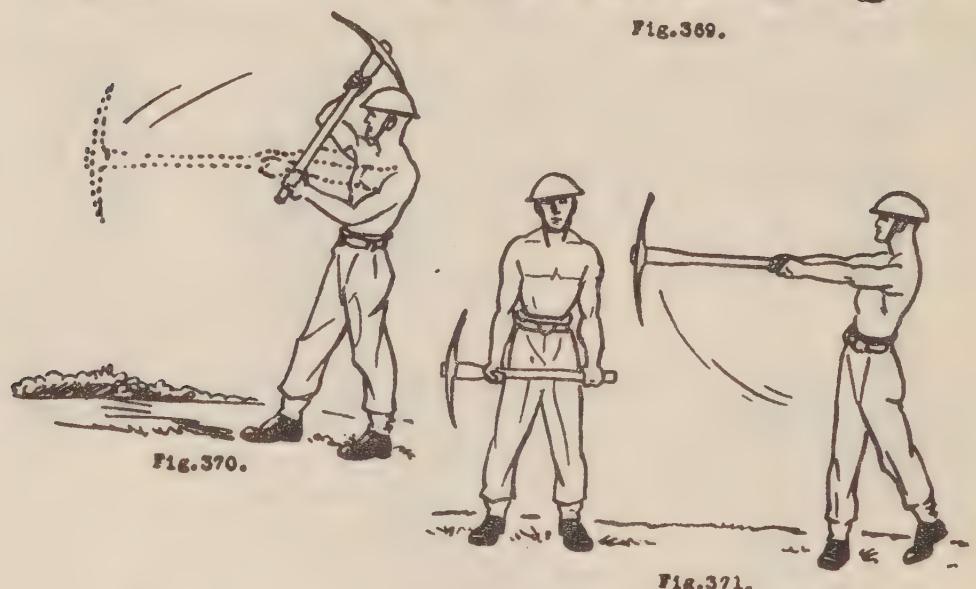
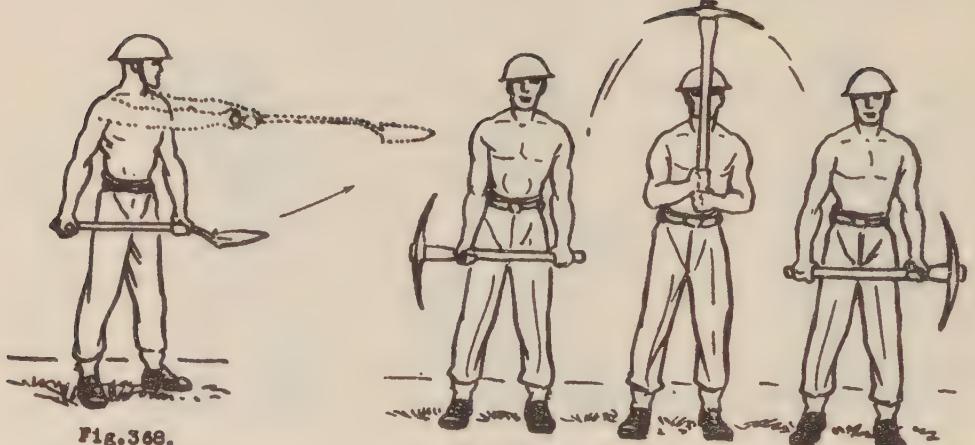
(a)

Fig. 367.



(b)

(c)



(xiv) (Raised position—pick) "Strike", sliding the right hand down the helve as the movement is made; slide right hand to pick head; raise pick and stretch up to the starting position. Repeat the exercise several times before changing to the other shoulder (Fig 372).

(xv) (Ready position—shovel) Rhythmical trunk turning to the left with shovel swinging to the left. The position of the hands should not be changed during the swinging movement. Repeat the exercise several times before changing to the other side (Fig 373).

(xvi) (Ready position—shovel) Bend both knees and place the left forearm against the left knee and the back of the right hand against the inside of the right thigh just above the knee. Make several thrusting movements to fill the shovel with assistance from the right knee. Repeat the exercise to the other side (Fig 374).

NOTE.—Exercises (xi) to (xvi) comprise Series II of pick and shovel exercises.

(xvii) (Ready position—pick) Release the right hand grip and allow the pick head to swing downward-side-ways in front of the legs to the opposite side. Without a pause make a return swing, catching the pick in the right hand at the ready position. Care must be taken to avoid striking the legs with the pick. Repeat the exercise after changing the pickhead to the other hand (Fig 375).

(xviii) (Raised position—pick) Change the pick slowly from shoulder to shoulder, passing through the arms forward position with the arms straight. The hands are changed as the pick is raised to the opposite shoulder. The hands slide along the helve as the pick is lowered and raised. Perform the exercise several times with the right foot forward, then repeat it with the left foot forward (Fig 376).

(xix) (Ready position—pick) Trunk turning from side to side with pick swinging downward-sideways in front of the legs and over the left and right shoulders alternately. The exercise is performed rhythmically from side to side. The position of the hands is changed at approximately the lowest point of the swing. At the completion of each swing the arms are bent at the elbows and the pick is raised above the shoulder (Fig 377).

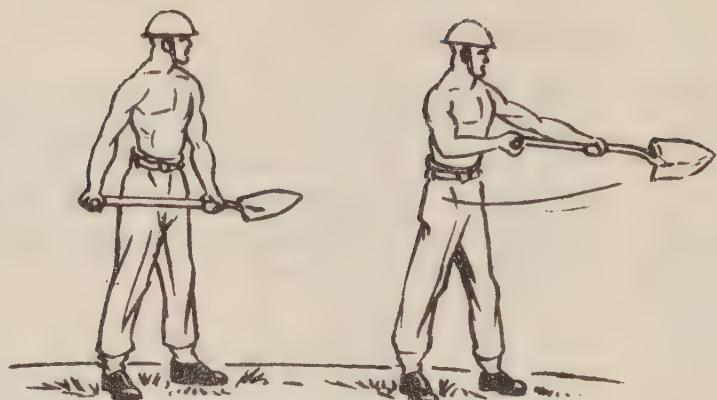


Fig. 373.

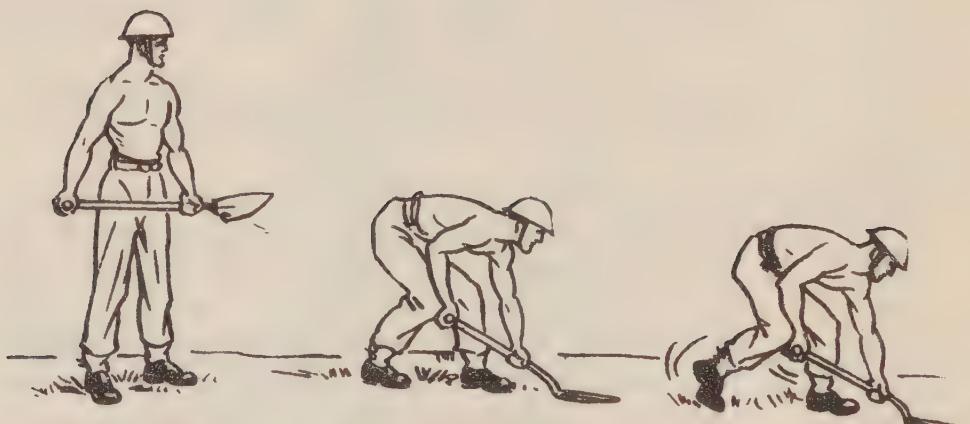


Fig. 374.

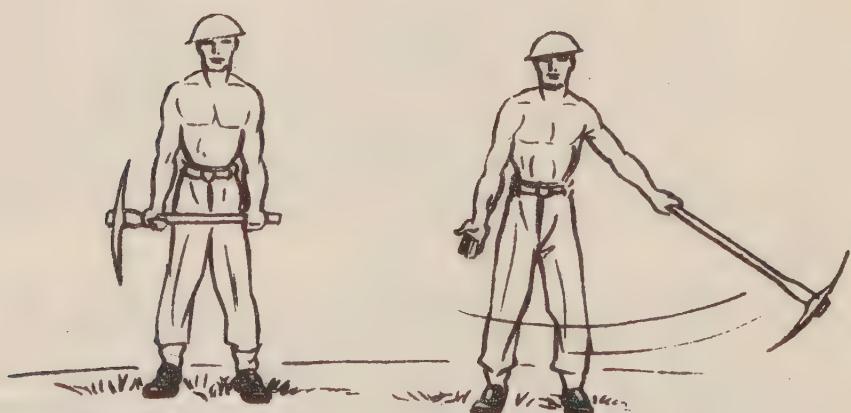


Fig. 375.

(xx) (Raised position—pick) "Strike", sliding the right hand down the helve as the movement is made; "break" and "rake" several times; slide the hand to the pickhead; recover to the raised position. Repeat the exercise from the raised position over the left shoulder with the left foot forward (Fig 378).

(xxi) (Ready position—shovel) "Swing and fill"—bend the knees slightly and swing the shovel backward with the weight of the body on the right foot, the left arm straight and the left hand near the right knee. Swing the body and shovel forward, as if filling the shovel, bending the left knee with the weight of the body behind the thrust (Figs 379 (a) and 379 (b)).

"Handle low"—depress the "T" piece of the helve (Fig 379 (c)). "Swing and throw"—swing the shovel backward just clear of the ground until the pan is over the right toe, with the weight of the body on the right foot. Straighten the knees and the back, and swing the shovel forward, bringing the weight of the body on to the left foot, the shovel sliding freely through the left hand, the right hand directing it (Fig 379 (d)). Continue rhythmically at a rate of about 18–20 throws per minute. Repeat the exercise to the other side after changing the position of the shovel.

(xxii) (Ready position—shovel) Working in pairs, shovel and throw medicine balls or similar objects from partner to partner with a short vigorous throw forward towards the feet (Fig 380).

(xxiii) (Ready position—shovel) Working in pairs, shovel and throw medicine balls from partner to partner with a vigorous throw forward over bar or rope about 4 ft high (Fig 381).

NOTE.—Exercises (xvii) to (xxiii) comprise Series III of pick and shovel exercises.

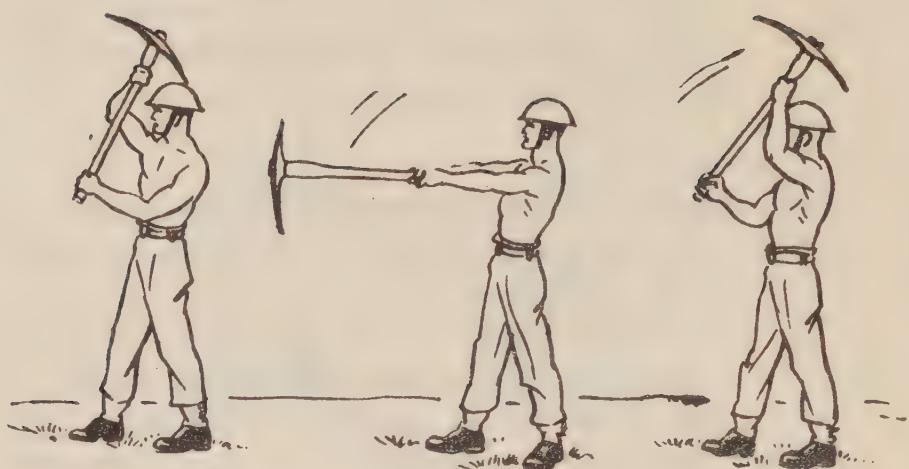


Fig. 376.

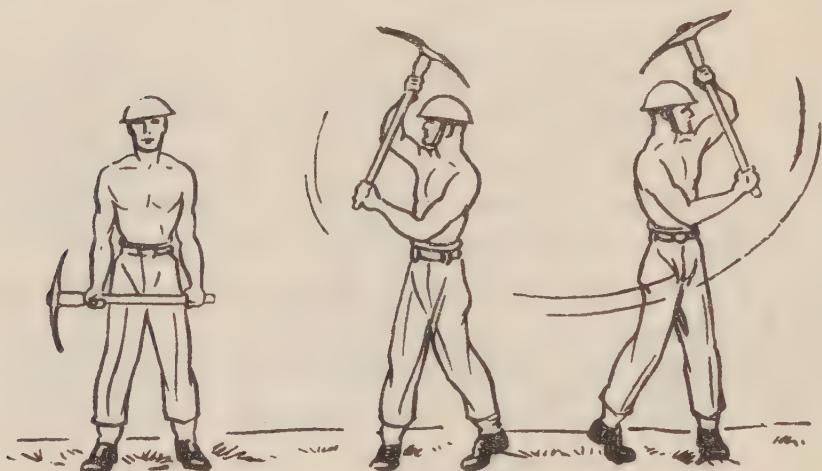


Fig. 377.



Fig. 378.

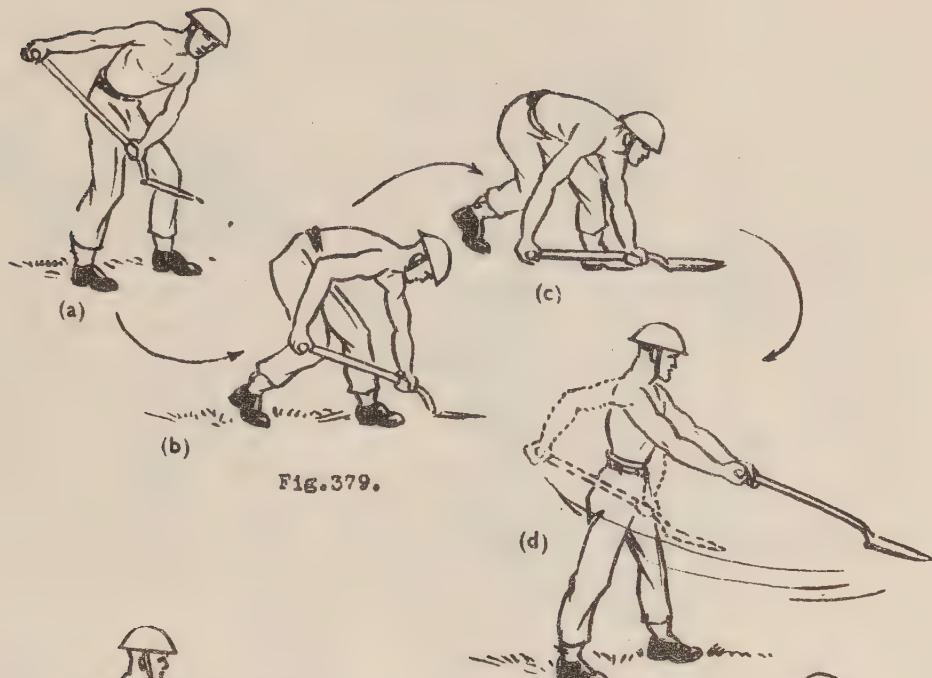


Fig. 379.

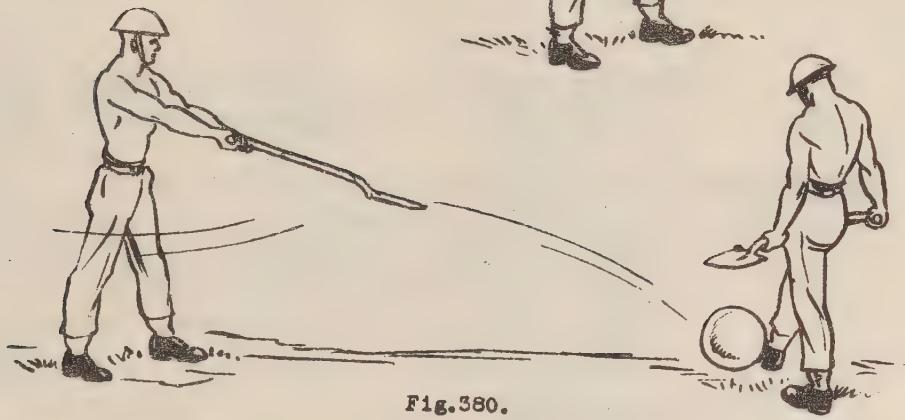


Fig. 380.

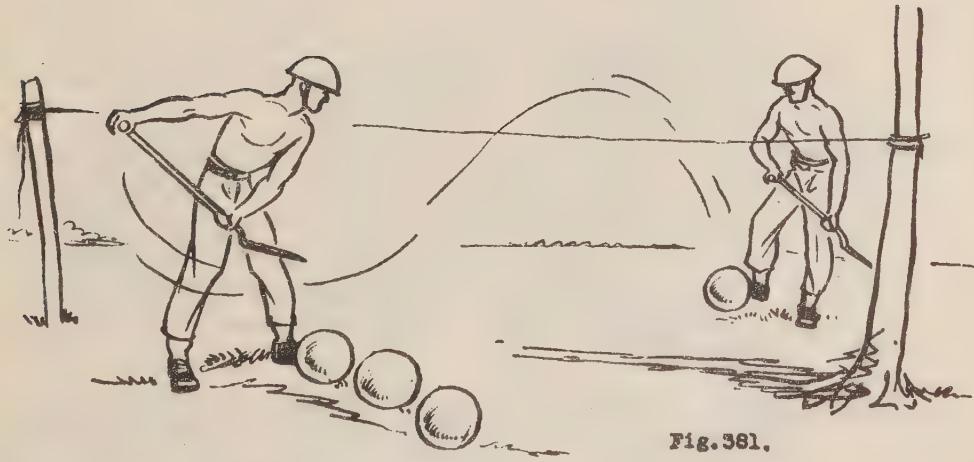


Fig. 381.

(c) *Rifle exercises—Standard II. Elementary* (see Page 119).

- (i) *Grip (vertical raise)*.—(Astride, arms forward, elbows bent to a right angle, alternate grasp) Releasing left hand grip raising rifle to the vertical and lowering to starting position with the right hand. Change hands and repeat exercise, releasing right hand grip (Fig 382).
- (ii) *Dexterity (climbing up and down rifle)*.—(Astride, arms forward, holding rifle vertical with both hands on the butt) Moving hand over hand (small movements) up and down the rifle (Fig 383).
- (iii) *Shoulder (circling sideways)*.—(Astride, arms downward, rifle grasped in right hand at point of balance) Circling rifle upward-sideways—downward. Change hand and repeat exercise with left hand (Fig 384).
- (iv) *Wrist (wrist turning)*.—(Astride, right arm forward, elbow bent to a right angle, grasp at point of balance, rifle vertical) Wrist turning upward and downward. Change hands and repeat exercise with the left hand (Fig 385).

NOTE.—Quickener.

Walking, observing, freezing and on signal, assuming the "on guard" position, quickly and quietly.

Standard II. Intermediate (see Pages 119 and 121).

- (i) *Grip (single shoulder lift)*.—(Astride, arms downward, alternate grasp) Releasing left hand grip, raising rifle to right shoulder with right hand. Change hands and then repeat exercise releasing right hand grip (Fig 386).
- (ii) *Dexterity (aim and twist)*.—(Standing aim) Transferring right hand to point of balance and left hand to outer band and twisting the rifle backward through a complete circle, followed immediately by twisting the rifle forward through a complete circle and resuming the standing aim position (Fig 387).
- (iii) *Shoulder (side circles)*.—(Astride, right arm sideways, palm turned upward grasping butt of rifle, left arm bent across the front of the body, grasping rifle at nosecap with the left hand just below the chin) Right arm circling backward and forward. Change hands and repeat exercise with left arm (Fig 388).
- (iv) *Wrist (shoulder circle one hand)*.—(Standing aim) Releasing left hand grip and with the right hand circling rifle downward-backward-over to standing aim position. Change hands and repeat with left hand (Fig 389).

NOTE.—Quickener.

Running to kneeling aim.

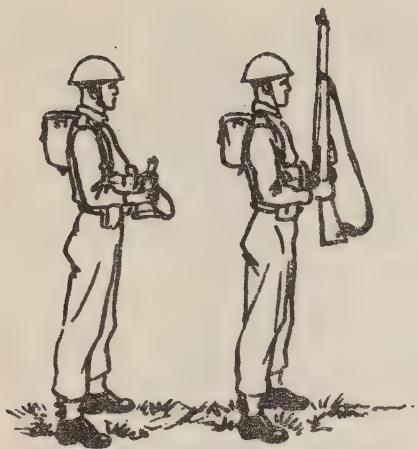


Fig. 382.

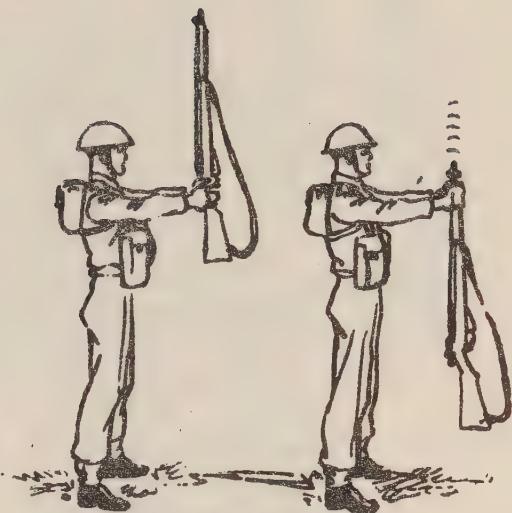


Fig. 383.

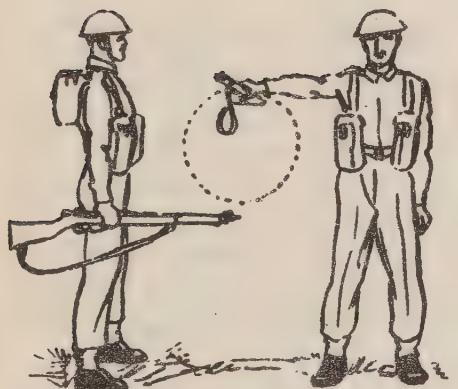


Fig. 384.

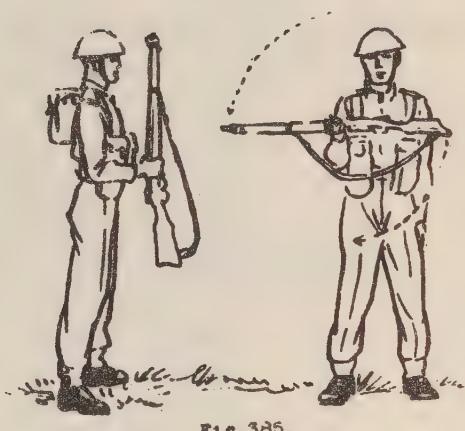


Fig. 385.

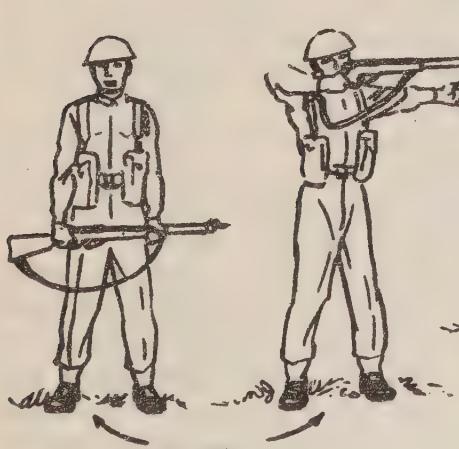


Fig. 386.

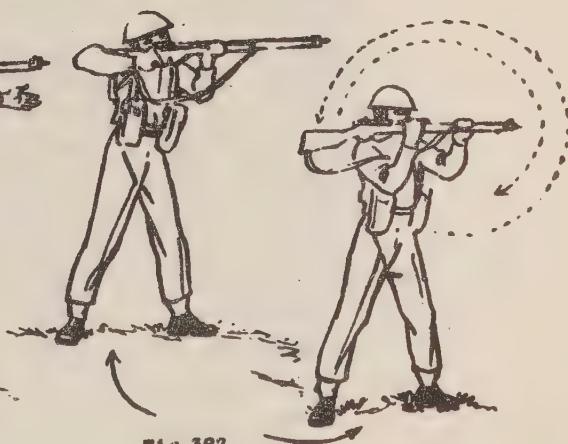


Fig. 387.

Standard II. Advanced (see Page 121).

- (i) *Grip (wrist bending and stretching).*—(Astride, arms forward, over grasp) Wrist bending downward and stretching upward (Fig 390).
- (ii) *Dexterity (front circling).*—(Astride, right arm forward, elbow bent to a right angle, grasp at point of balance, rifle vertical) Circling rifle outward (full circle) with the right hand. Change hands and repeat exercise with the left hand (Fig 391).
- (iii) *Shoulder (double forward-under circles).*—(Astride, arms forward, over grasp) Circling the rifle in front of the body downward-upward-forward and inward-downward-upward (Fig 392).
- (iv) *Wrist (under-overswings).*—(Astride, arms forward, under grasp) Releasing left hand grip, swinging muzzle of rifle downward-sideways-over and catching with the left hand just above the outer band, followed by releasing right hand grip, swinging butt of rifle downward-sideways-over and catching with the right hand at the small of the butt (Fig 393).

NOTE.—Quickener.

Walking, firing at ground, tree or air targets.

Standard III. Elementary (see Pages 121 and 123).

- (i) *Grip (forward lowering and raising muzzle).*—(Astride, arms downward, alternate grasp) Releasing left hand grip, slowly point rifle forward with the right hand, slowly lower muzzle to about 6 ins from the ground; slowly raise the muzzle until it is horizontal to the ground and return to starting position. Change hands and repeat exercise with left hand, releasing right hand grip (Fig 394).
- (ii) *Dexterity (overtwist).*—(Astride, arms downward, over-grasp) Transferring the right hand to the point of balance and with this hand twisting the rifle through a full circle to reverse position. During the twisting movements the left hand is transferred to the small of the butt and the right hand to the outer band. Change hands and repeat exercise with the left hand (Fig 395).
- (iii) *Shoulder (high circles).*—(Astride, arms upward, over grasp) Maintaining the grasp on the rifle with both hands, describe small or large circles forward or backward above the head (Fig 396).
- (iv) *Wrist (circle to kneeling position).*—(Astride, arms downward, alternate grasp) Releasing left hand grip, circling rifle downward-backward-forward with right hand to catch at outer band with left hand. At the same time, advance the left foot and kneel on the right knee. Change hands and repeat with left hand to kneeling position on the left knee (Fig 397).

NOTE.—Quickener.

Sitting aim, changing quickly to lying aim facing rear and *vice versa*.

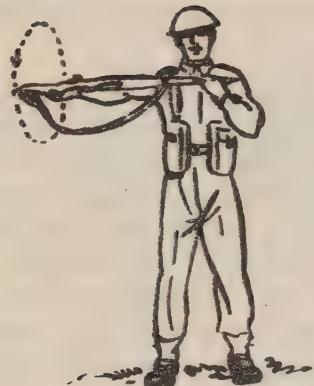


Fig. 388.

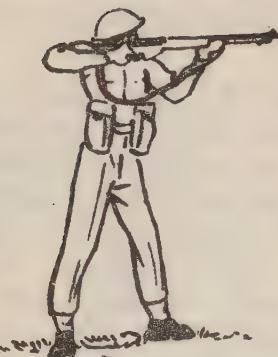


Fig. 389.

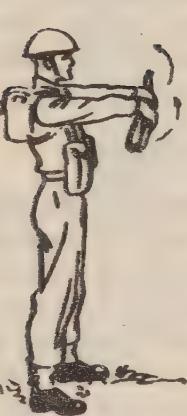
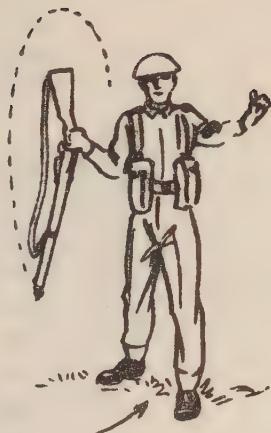


Fig. 390.



Fig. 391.



Fig. 392.



Fig. 393.

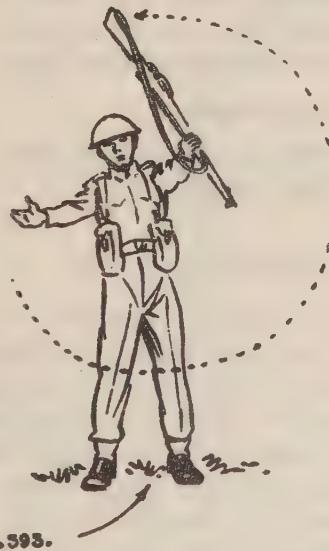


Fig. 394.

Standard III. Intermediate (see Page 123).

- (i) *Grip (forward raising and lowering with both hands).*—(Astride, rifle forward, butt on ground, hands gripping rifle with inward grasp between nosecap and outer band) Raising rifle forward to shoulder height and lowering to starting position (Fig 398).
- (ii) *Dexterity (vertical twist).*—(Astride, arms downward, alternate grasp) Reversing left hand grip, raising rifle to vertical position in front of the body with the left hand and transferring the right hand to the outer band. The left hand is again reversed and the rifle continues the twisting movement to the left and downward to the starting position; the right hand being released to catch the rifle at the small of the butt. Change hands and repeat with the right hand (Fig 399).
- (iii) *Shoulder (two-handed swing over head).*—(Astride, rifle forward, butt on ground, hands gripping rifle with inward grasp between nosecap and outer band) Swinging rifle round the head with both hands, describing a complete circle to left and then to right (Fig 400).
- (iv) *Wrist (kneeling, wrist rotating).*—(Kneeling on right knee, left hand gripping rifle at point of balance, left forearm on left knee, right hand on small of butt, rifle horizontal) Striking small of butt with right hand, rotate the rifle muzzle to the right, and catching with the right hand at the outer band. To return the rifle to the starting position, strike it underneath with the right hand and rotate it in the reverse direction, catching it with the right hand at the small of the butt (Fig 401).

NOTE.—Quickener.

Lying position, changing quickly to standing, sitting or kneeling positions.

Standard III. Advanced (see Page 124).

- (i) *Grip (aim in eight movements).*—(Astride, arms downward, alternate grasp) Releasing left hand grip, raise rifle to shoulder with right hand (Fig 402). Advance left foot and place left hand at point of balance, assuming standing aim position (Fig. 403). Release grip with right hand (Fig 404). Return right hand to small of butt Fig (405). Release grip with left hand (Fig 406). Return left hand to point of balance (Fig 407). Carry left foot backward to astride position and at the same time release grip with left hand. Lower rifle with right hand to starting position (Fig 408). Change hands and repeat exercise with left hand.

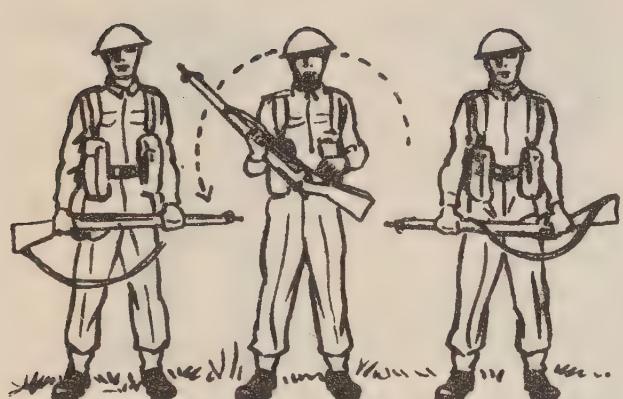


Fig. 395.

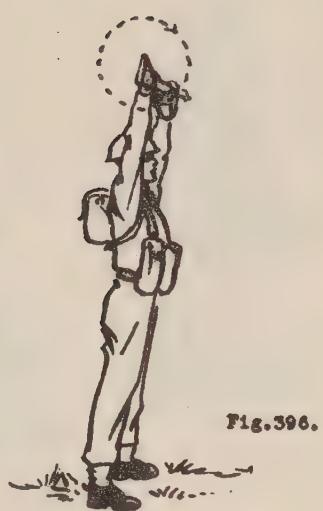


Fig. 396.

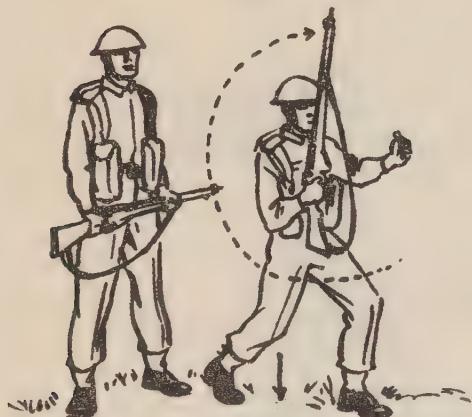


Fig. 397.

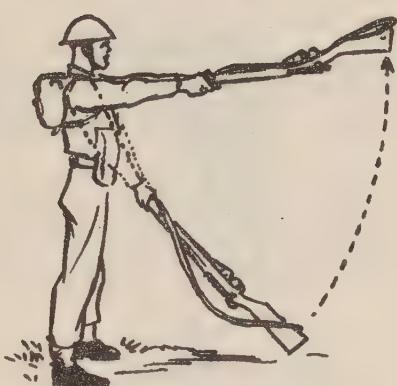


Fig. 398.

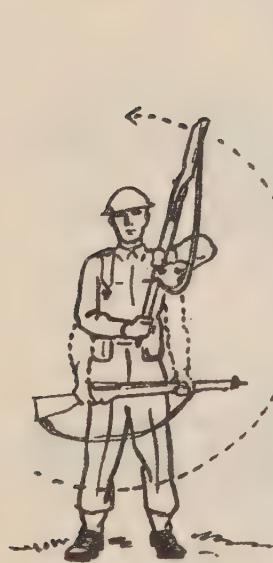


Fig. 399.

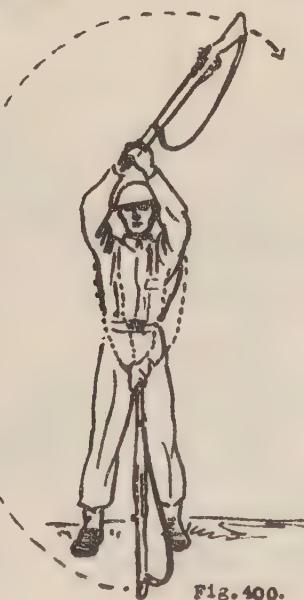
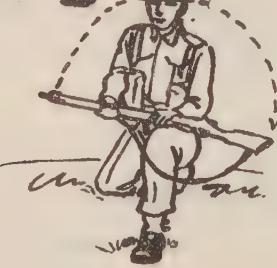


Fig. 400.



Fig. 401.





Figs. 402 and 408.

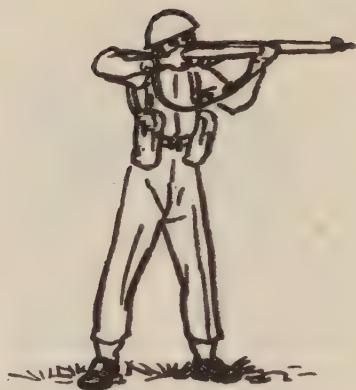


Fig. 403, 405, 407.



Fig. 404.

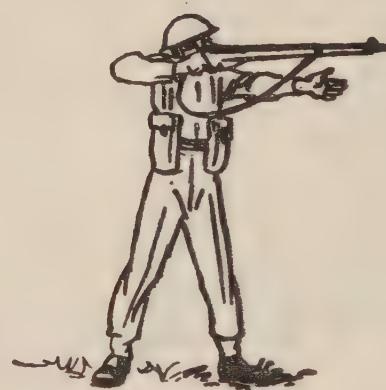


Fig. 406.

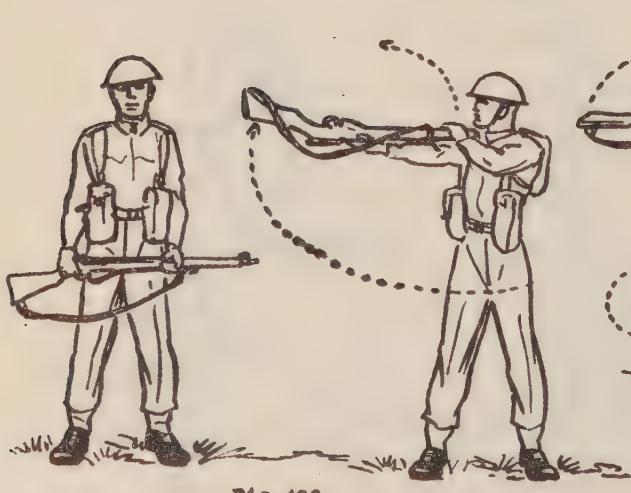


Fig. 409.



Fig. 410.



Fig. 411.

- (ii) *Dexterity (side reach and change).*—(Astride, arms downward, over grasp) Swinging rifle sideways to the right to shoulder-height, changing grip with right hand and placing this hand at the point of balance; swinging the rifle downward-inward with the right hand and at the same time releasing left hand grip and changing this hand to the small of butt. This is followed by changing the right hand grip to the outer band, which brings the rifle back to the starting position, except that the muzzle points in the opposite direction. Repeat the exercise, swinging the rifle to the left side and releasing left hand grip (Fig 409).
- (iii) *Shoulder (lying, alternate arm bending and stretching).*—(Lying, astride, heels down, rifle held at right side of body, right hand at small of butt, left hand at outer band) Keeping rifle just clear of the ground, move it forward with both hands until the left arm is straight, then, keeping the left arm stationary, straighten the right arm until the rifle is held at full extent of both arms and just clear of the ground. Bend the left arm, keeping right arm stationary; then bend the right arm and straighten the left arm (Fig 410).
- (iv) *Wrist (lying, twisting).*—(Lying, arms bent to right angles, elbows on ground, alternate grasp, rifle parallel to ground and level with the face) Twisting rifle forward and backward in both hands (Fig 411).

NOTE.—Quickener.

Kneeling, followed by leopard crawl and lying position.

(l) Shell exercises—Series II. (See Page 126.)

- (i) (Sitting on bench, shell held in front of chest, arms bent, over grasp) Arm stretching upward (Fig 412).
- (ii) (Astride, shell held horizontal behind neck, over grasp) Trunk bending downward with increasing range (Fig 413).
- (iii) (Short astride, shell held horizontal behind neck, over grasp) Heel raising and knee full bending forward (Fig 414).
- (iv) (Shell held in front of thighs, arms straight, palms facing forward) Arm bending and stretching downward (Fig 415).
- (v) (Astride, shell held horizontal behind neck, over grasp) Trunk bending from side to side, with a slight pause in the upright position (Fig 416).
- (vi) (Astride, arms downward, over grasp, trunk slightly forward) Arm bending until shell touches top of chest (Fig 417).



Fig. 412.

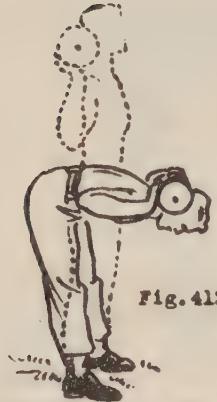


Fig. 413.

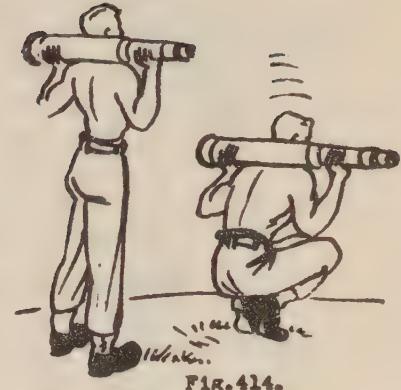


Fig. 414.

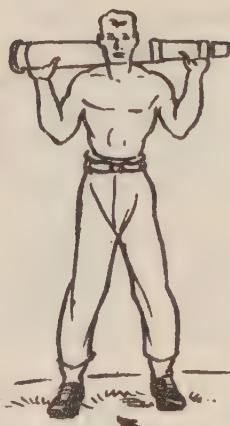
Fig.
415.

Fig. 416.



Fig. 417.

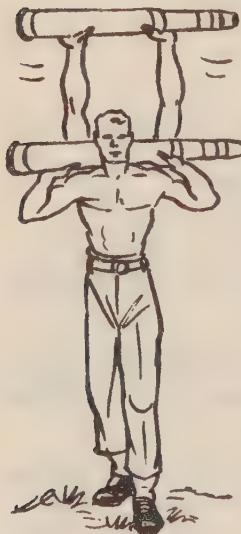


Fig. 418.

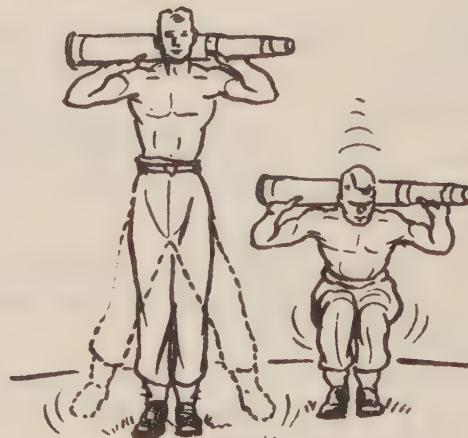


Fig. 419.



Fig. 420.

- (vii) (One foot slightly forward, shell held horizontal behind neck, over grasp, hands 12 ins apart, elbows pointing sideways) Arm stretching upward (Fig 418).
- (viii) (Shell held horizontal behind neck, over grasp) Short astride jumping, followed by knee full bending with knees forward keeping flat feet on the ground (Fig 419).
- (ix) (Astride, shell vertical and grasped below fuze with left hand above right, hands in front of chest) Moving shell slowly upward hand under hand, and downward, hand over hand (Fig 420).

Quick reaction activities should be included during a selection of three or four of the above exercises. The activities should be chosen from the following list :—

- (i) Race round shell or shells, running, hopping or quick walking.
- (ii) Alter position of shell on ground to face in named position.
- (iii) Jump over shell a given number of times.
- (iv) Change places with man on left or right, carrying shell.
- (v) First man with shell under named arm, or in any named position.
- (vi) Change shell with man opposite, or with man on left or right.
- (vii) Lift shell to vertical position in front of body, revolve sideways a given number of times and then lower it to ground.
- (viii) Running round shell followed by jumping over it, both a given number of times.
- (ix) Shell passing relay races.

(e) *Stick exercises.* (See Page 128.)

- (i) (In pairs, facing, several yards apart, stick held vertical with one end on ground) Release grasp, run and change places with partner, trying to catch his stick before it falls.
- (ii) (Circle formation, stick held vertical, one end on ground) Release grasp, run round given number of places and try to catch stick before it falls.
- (iii) (In pairs, facing, several yards apart, vertical stick grasped at point of balance with one hand) Throwing forward to partner and catching, using one hand only.



Fig. 421.



Fig. 422.



Fig. 423.



Fig. 424.

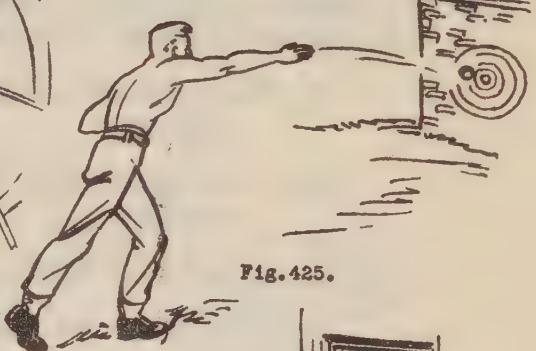


Fig. 425.



Fig. 426.



Fig. 427.

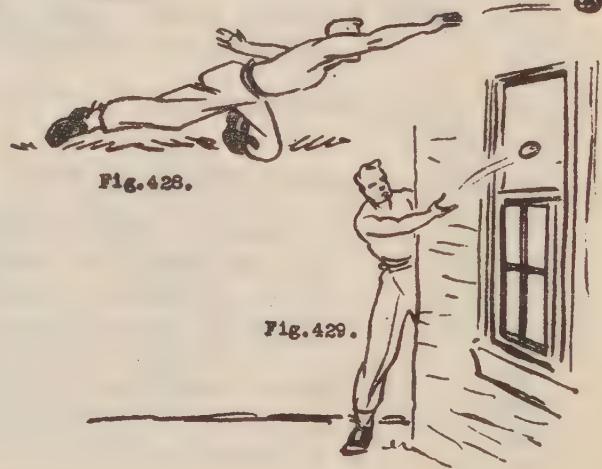
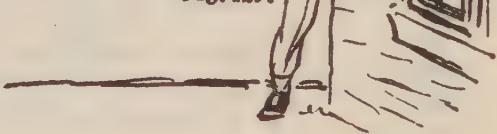


Fig. 428.

Fig. 429.



- (iv) (In pairs, facing) Toe touching (Fig 421).
- (v) Threading the needle (Fig 422).
- (vi) Jumping the stick (Fig 423).
- (vii) Run round own stick a given number of times and catch it before it falls.
- (viii) Holding stick with both hands at point of balance and quick twisting sideways (Fig 424).
- (ix) Balance stick vertically on the palm (or back) of one hand, throw it in the air and catch, using one or both hands as directed.
- (x) Balance stick vertically on one foot, throw it in the air and catch, followed by balancing it on the palm or back of one hand, throwing and catching as in exercise (ix).
- (xi) Balance stick vertically on the chin.
- (xii) Hold stick vertical, one end on ground and swing one leg over it, catching it before it falls.
- (xiii) Balance two sticks vertically, one on each hand.
- (xiv) As (xiii) but combined with knee full bending forward.

(f) Throwing. (See Pages 128 and 130.)

- (i) Throwing overhand from standing position, left and right hand, at wall or ground target (Fig 425).
- (ii) Lobbing forward from standing position left and right hand, for height over rope (Fig 426).
- (iii) Lobbing underhand from standing position, left and right hand, through window or door target (Fig 427).
- (iv) Lobbing overhand from kneeling position, left and right hand, for distance and accuracy, followed immediately by falling to lying position (Fig 428).
- (v) Lobbing underhand or overhand, left and right hand, through window or door target, from behind cover or round corners (Fig 429).
- (vi) Various types of throwing according to height of cover.
- (vii) Throwing from slit trench into slit trench at a distance of 10-20 yds.
- (viii) Throwing competitively for distance and accuracy, using a variety of throws and left and right hand (Fig 430).

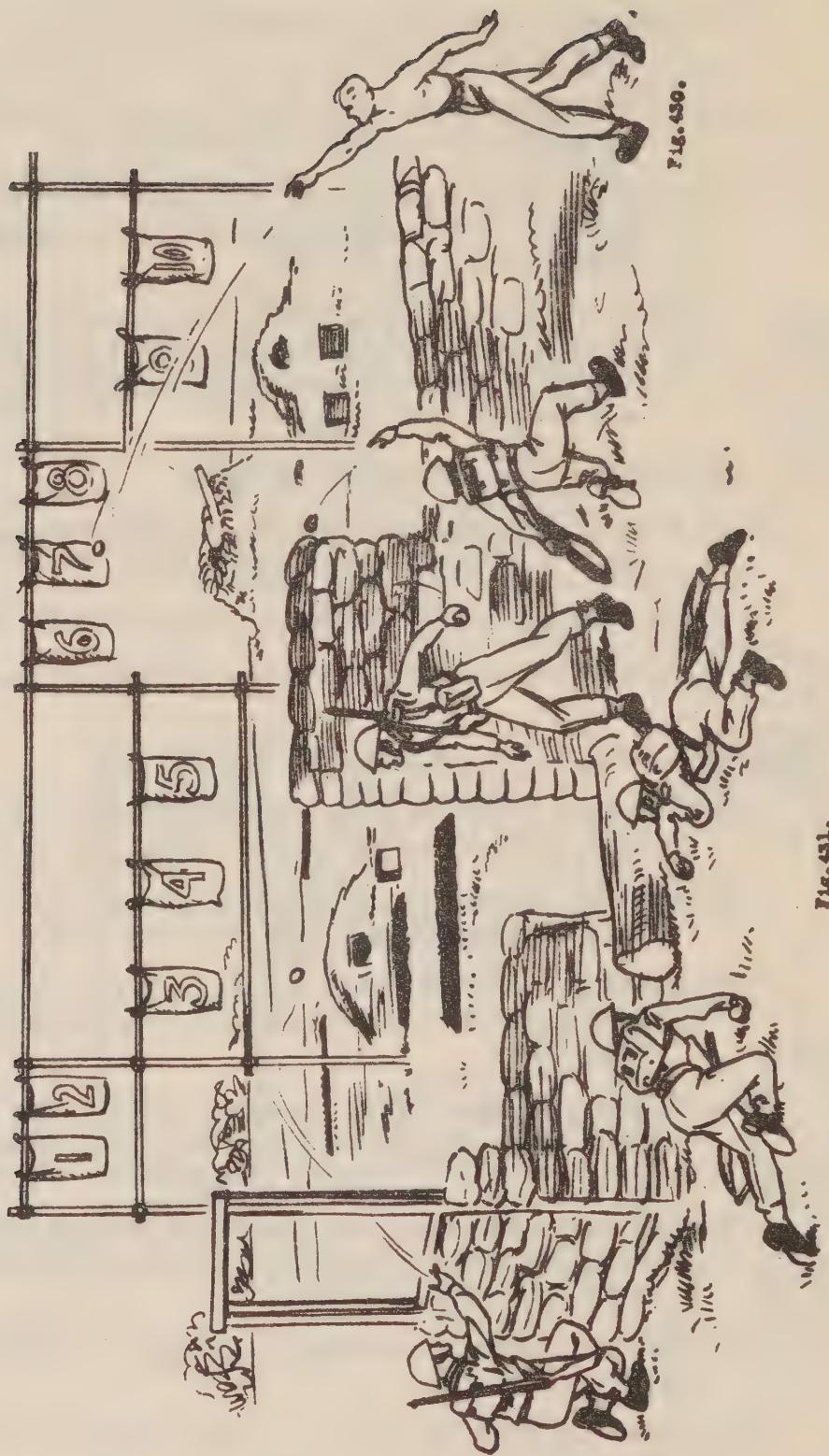


Fig. 420.

Fig. 421.

- (ix) Individual fieldcraft movements followed by throwing, using a variety of throws.
- (x) Throwing while blindfold at targets indicated by sound.
- (xi) The "throwing course" (Fig 431).

Speed.

(a) *Sprinting.* (See Page 132.)

- (i) George's 100 up, including several short spells of acceleration (Fig 432).
- (ii) Quick off the mark (Fig 433).
- (iii) Running on spot alternating with short spells of running with rapid strides (Fig 434).
- (iv) Sprint running alternating with slow running.
- (v) Sprint races over distances of 50, 75 or 100 yards.
- (vi) Sprint short distances followed by crawling and *vice versa*.
- (vii) Sprinting in rank formation with linked elbows.
- (viii) Sprinting from cover to cover.

(b) *Relay races.* (See Pages 132 to 136.)

- (i) Arch and straddle (Fig 435).
- (ii) Arch and tunnel (Fig 436).
- (iii) Back support (Fig 437).
- (iv) Ball passing versus team running (Fig 438).
- (v) Carry man in threes (Fig 439).
- (vi) Crossing the stream (Fig 440).
- (vii) Exchange (Fig 441).
- (viii) Leap frog (Fig 442).
- (ix) Lifting (Fig 443).
- (x) Medley (Fig 444).
- (xi) Over the legs (Fig 445).
- (xii) Over and under leap frog (Fig 446).
- (xiii) Over and under stick (Fig 447).
- (xiv) Over stick followed by leap frog (Fig 448).
- (xv) Racing tunnel ball (Fig 449).
- (xvi) Racing tunnel ball followed by arch and straddle (Fig 450).
- (xvii) Sprint (Fig 451).
- (xviii) V.C. (Fig 452).
- (xix) Wheel (Fig 453).
- (xx) Wheel and tunnel (Fig 454).



Fig. 432.



Fig. 433.



Fig. 434.

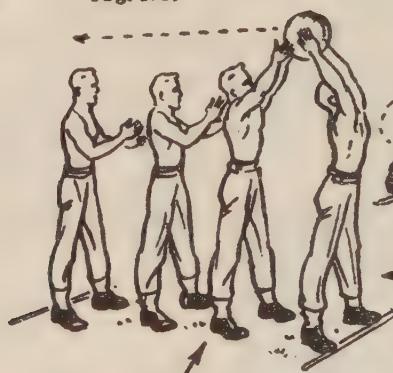


Fig. 435.



Fig. 436.

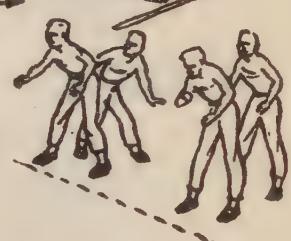


Fig. 437.

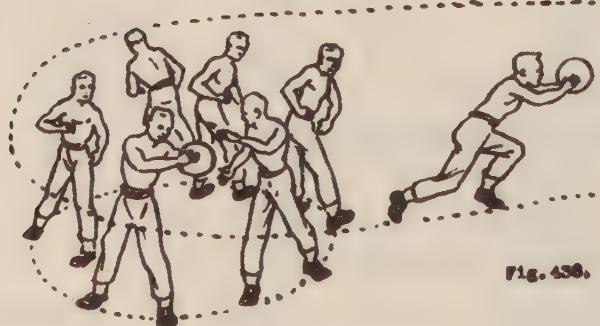


Fig. 439.



Fig. 439.



Fig. 440.

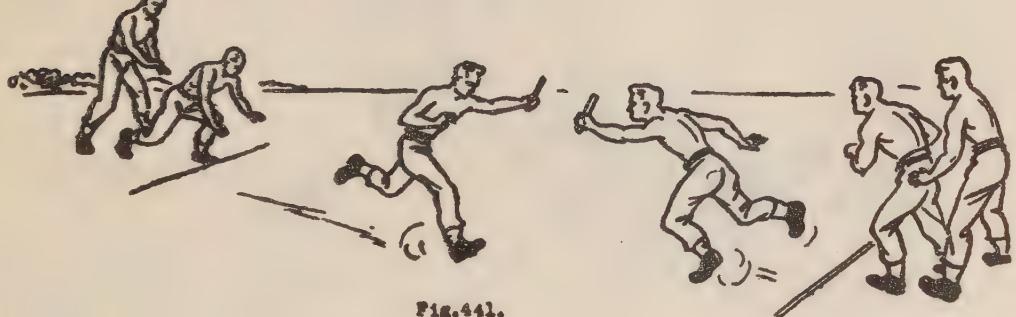


Fig. 441.

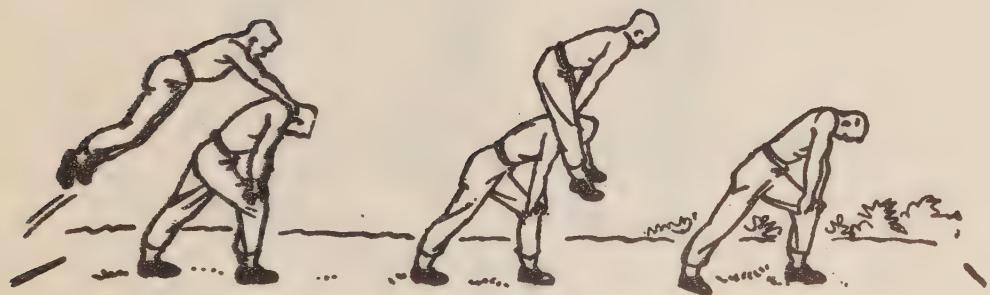


Fig. 442.



FIG. 443.

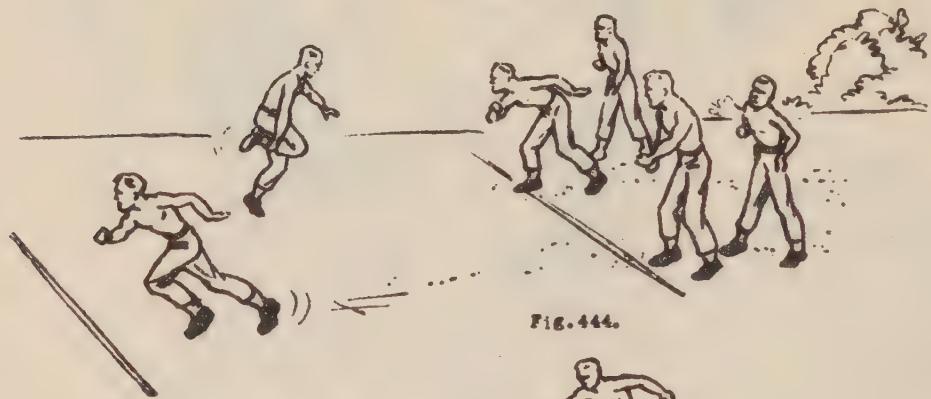


FIG. 444.

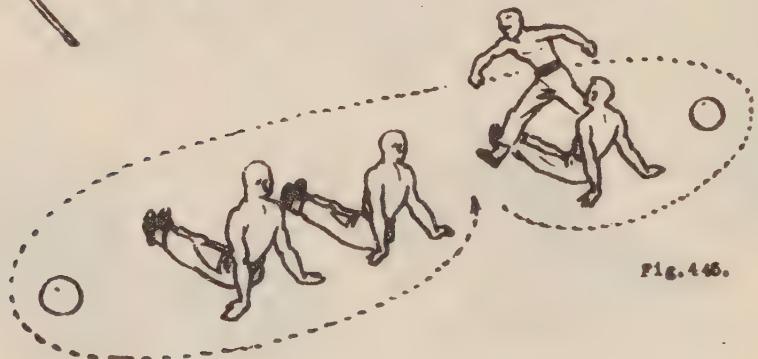


FIG. 445.

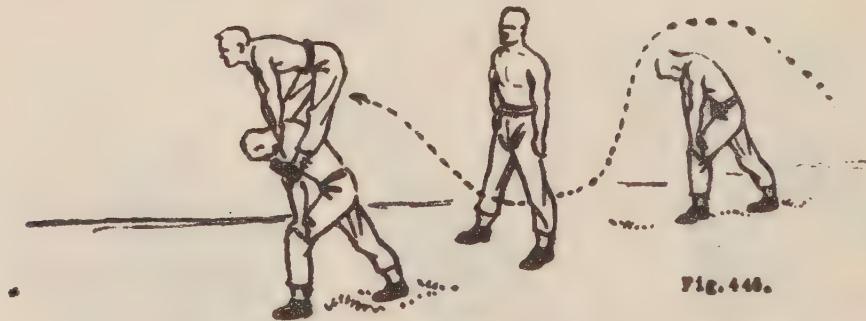
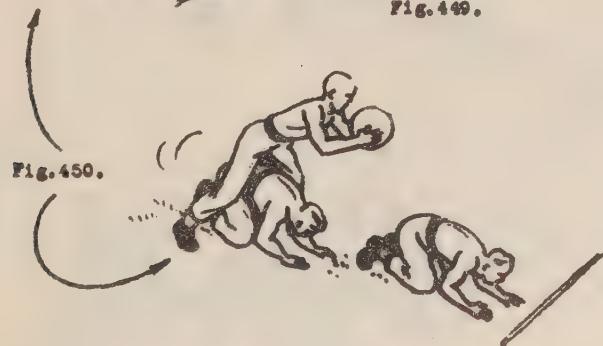
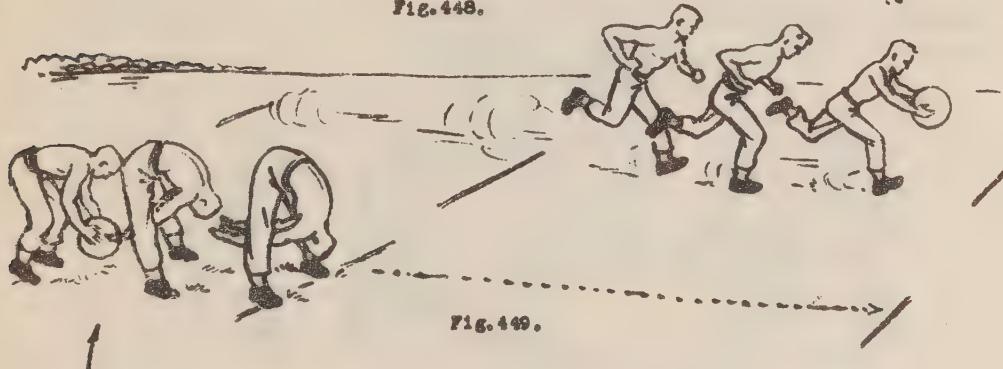


FIG. 446.



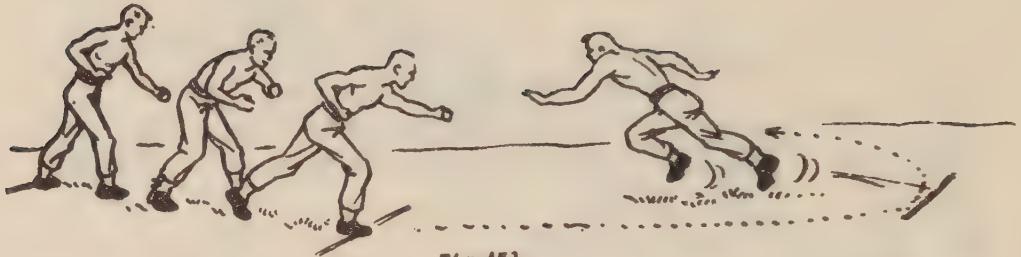


Fig. 451.

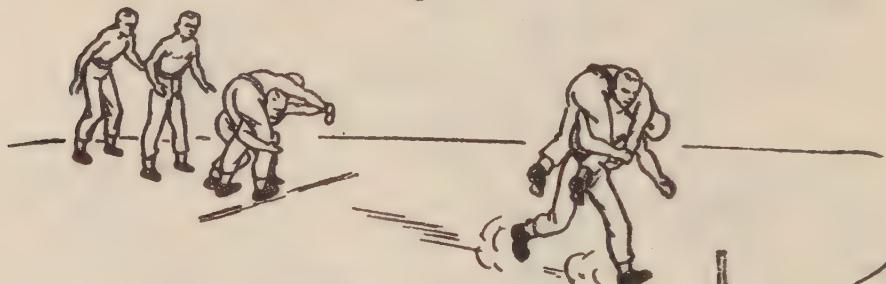


Fig. 452.

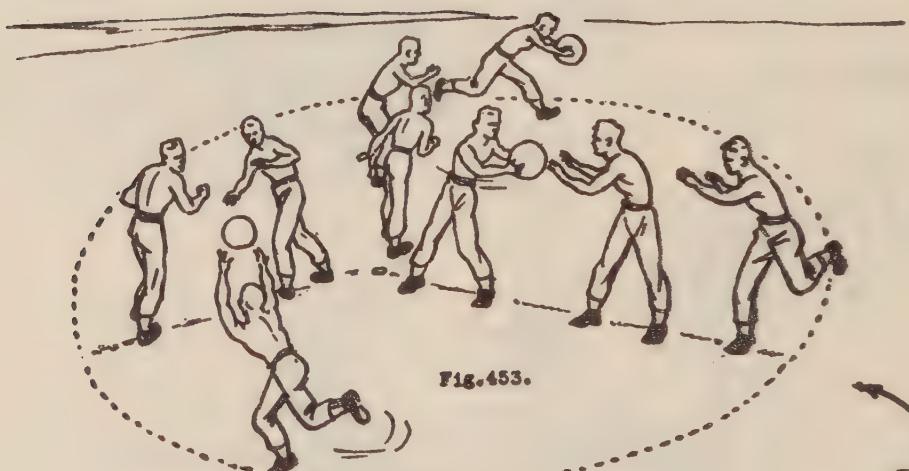


Fig. 453.

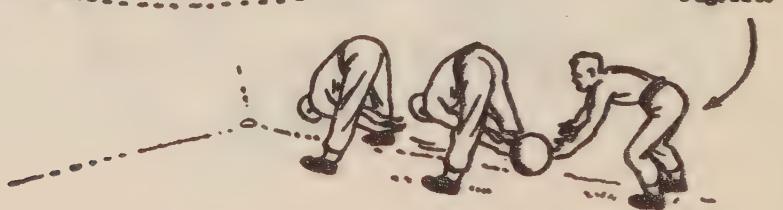


Fig. 454.

4. Combat

Summary of Boxing lessons

Lesson I.

- (a) The target.
- (b) Clenched fist and punches that count.
- (c) On guard position, emphasizing poise, relaxation and protection.
- (d) Swaying by movement from knees and ankles.
- (e) Simple footwork.
- (f) Straight left :—
 - (i) Slow motion.
 - (ii) Using medicine ball.
 - (iii) At sack.
- (g) Method of holding the punch pad for straight left.
- (h) Straight left at pad, combining co-ordination, power and distance.
- (i) Straight left at pad with variation of speed and footwork.

Lesson II.

- (a) Purposeful footwork in pairs.
- (b) Block guard for straight left.
- (c) Right hand deflection, followed later by counter to body
- (d) Straight left to mark.
- (e) Right forearm deflection, followed later by counter to head.
- (f) The feint attack.
- (g) Application of feint attack, followed by straight left.
- (h) One round of boxing, left hand hitting only.

Lesson III.

- (a) Purposeful footwork, keeping opponent moving.
- (b) Straight right at sack or pad.
- (c) Application of straight right on weak left lead.
- (d) Right hook punch at sack.
- (e) Left hook punch at sack.
- (f) Short hook punches at pad.
- (g) Feint attack followed by right or left hook.
- (h) Long left hook to point or mark.
- (i) Guards for all hooks, followed later by counters.
- (j) Slipping, later add counters.
- (k) Ducking, later add counters.
- (l) One round of boxing, practising previous lessons.

Lesson IV.

- (a) Purposeful footwork from centre of ring, manœuvring opponent into a corner.
- (b) Slip inside, right hook to head.
- (c) Upper cuts on pad, later guards for the same.
- (d) Straight left followed by straight right at pad.
- (e) Hook punches, in pairs.
- (f) In-fighting, at sack or pad.
- (g) In-fighting, in pairs.
- (h) Feinting and attacking, using a variety of punches.
- (i) Ring tactics.
- (j) Boxing in pairs.
- (k) Four ring practice.

NOTE.—The detail of the above lessons is given in Part IX,
“ Basic and Battle Physical Training.”

Summary of wrestling lessons

Lesson I.

- (a) Description of rules.
- (b) Initial hold.
- (c)
 - (i) *Attack*.—Front waist hold.
 - (ii) *Defence*.—Prevent opponent obtaining inside position and press heel of hand against his chin.
 - (iii) *Counter*.—Counter lift or turn opponent and apply rear waist hold.

Lesson II.

- (a)
 - (i) *Attack*.—Waist and thigh hold.
 - (ii) *Defence*.—Press heel of hand against opponent's chin and withdraw one or both legs.
 - (iii) *Counter*.—Front waist hold.
- (b)
 - (i) *Attack*.—Shoulder (neck) and thigh hold.
 - (ii) *Defence*.—Withdraw one or both legs; force opponent's head back, or turn him by forcing his right arm upward and over his head.
 - (iii) *Counter*.—Rear waist hold or rear waist hold and half-nelson.

Lesson III.

- (a)
 - (i) *Attack*.—Lift from both thighs.
 - (ii) *Defence*.—Withdraw both legs, or press opponent's head towards floor.
 - (iii) *Counter*.—Standing cradle hold, or forward chancery and swing.
 - (iv) *Re-attack*.—The heave.
 - (v) *Counter*.—Counter heave.
- (b)
 - (i) *Attack*.—Forward crutch hold.
 - (ii) *Defence*.—Withdraw both legs, force opponent's head downward, or push his upper arm upward and sideways.
 - (iii) *Counter*.—Rear waist hold, rear waist and crutch hold, or rear waist hold and half-nelson.

Lesson IV.

- (a)
 - (i) *Attack*.—Forward chancery and swing.
 - (ii) *Defence*.—Press opponent's arm downward and inward and so prevent him from obtaining lifting power.
 - (iii) *Counter*.—Fireman's lift.
- (b)
 - (i) *Attack*.—Turn opponent and apply rear waist hold and half-nelson.
 - (ii) *Defence*.—Bend the body forward at the hips, or use a leg lock.
 - (iii) *Counter*.—Seize opponent's arm and apply flying mare.

Lesson V.

- (a)
 - (i) *Attack*.—Flying mare.
 - (ii) *Defence*.—Prevent opponent turning, and apply a forward leg lock.
 - (iii) *Counter*.—Rear waist hold and lift.
- (b)
 - (i) *Attack*.—Forward elbow hold (the tip).

- (ii) *Defence*.—Force weight backward, withdraw both legs and force opponent's head downward while pulling arm free.
- (iii) *Re-attack*.—Leg grip and lift from below.

NOTE.—The detail of the lessons is given in Part IX "Basic and Battle Physical Training."

Summary of close combat lessons

Lesson I.

(a) Vulnerable parts of the body.

In front.

- (i) Point of chin.
- (ii) Sides of throat.
- (iii) Front of throat.
- (iv) Solar plexus.
- (v) Inside of knees.
- (vi) Shins.
- (vii) Insteps.

Behind.

- (i) Base of skull.
- (ii) Spine.
- (iii) Kidneys.

(b) Unarmed attacks.

- (i) Chin jab.
- (ii) Edge of the hand blow.
- (iii) Knee blow.
- (iv) Kick.
- (v) Stamp.
- (vi) Knock-out punch.

Lesson II.

(a) Unarmed attacks.

- (i) Forearm attack.
- (ii) Rugby tackle.
- (iii) Ankle and shoulder throw.

(b) Releases and counter-attacks.

Wrist release.

(c) Use of steel helmet.

- (i) Forward movement of head.
- (ii) Backward movement of head.
- (iii) Held in hand.

Lesson III.

(a) Armed attacks.

- (i) From the rear with a knife.
- (ii) From the front with a knife.

(b) Releases and counter-attacks.

- (i) Counter-attack to front strangle hold.
- (ii) Counter-attack when gripped round the waist.
- (iii) Counter-attack when clothing or equipment is held.

Lesson IV.(a) *Armed attacks.*

When armed with cosh, truncheon or similar weapon.

(b) *Releases and counter attacks.*

(i) When held over the arms from behind.

(ii) Counter-attack to strangle hold from behind.

Lesson V.(a) *Disarms and counter-attacks.*

(i) An opponent armed with a rifle and bayonet.

(ii) An opponent armed with a knife or bayonet.

(iii) An opponent armed with a cosh or truncheon.

(b) *Marching a man.*

(i) When you are armed with a rifle and bayonet.

(ii) When you are armed with a pistol.

(c) *Searching a man.*

When a wall is available.

Lesson VI.(a) *Disarms and counter-attacks.*

(i) An opponent armed with a pistol or sub-machine gun when he is in front of you.

(ii) An opponent armed with a pistol or sub-machine gun when he is behind you.

(b) *Marching a man.*

When unarmed.

(c) *Holding a man down.***PART III.—CARRIAGE (3 minutes)**

1. Re-form class in three ranks.

2. Position of attention.

3. Marching in squad formation.

SECTION 6.—QUICK REACTION ACTIVITIES

30. The purpose and uses of quick reaction activities have already been described in Section 2, paragraph 14, of this pamphlet. The majority of the game-form exercises, which are listed for use in Part I of the period may effectively be used as quick reaction activities. In addition, the following are also suitable for this purpose :—

- (a) Places change.
- (b) Knee boxing.
- (c) Crows and cranes.
- (d) Bull in the ring.
- (e) Take cover, line the bank, or over the wall.
- (f) Screaming bomb.
- (g) Heads and tails.
- (h) Compass bearings.
- (i) Shadow boxing.
- (j) Threading the needle in ranks.
- (k) Reaction touch.
- (l) First man with his feet off the ground.
- (m) Running on spot, change quickly to crawling.

SECTION 7.—EXAMPLES OF TYPICAL PERIODS OF BATTLE PHYSICAL TRAINING

NOTE.—The duration of the Periods in the following examples must not be regarded as necessarily officially recommended for that particular type of class concerned.

31. Example 1

Duration.—15 minutes keep-fit period.

Class.—30 employed men.

Place.—Outdoors.

Equipment.—Nil.

Dress.—Denim trousers, boots and gaiters ; stripped to the waist.

PART I.—GAME-FORM EXERCISES (7 minutes)

1. *Running.—Racing round the course.*
2. *Arm.—Chinese boxing (Fig 6).*
3. *Trunk.—Linked elbows tug-of-war (Fig 18).*
4. *Leg.—Hopping charges (Fig 22).*
5. *Arm.—Line pulling (Fig 32).*
6. *Trunk.—Dead man (Fig 41).*
7. *Leg.—Squat boat race (Fig 56).*

PART II.—RELAY RACES (5 minutes)

1. *Back support relay (Fig 437).*
2. *Leap frog relay (Fig 442).*
3. *Sprint relay (Fig 451).*

PART III.—CARRIAGE (3 minutes)

1. Re-form class in three ranks.

2. Position of attention.

3. Marching in squad formation.

32. Example 2

Duration.—20 minutes "keep fit" period.

Class.—30 drivers, R.A.C. or R.A.S.C.

Place.—Outdoors.

Equipment.—Tubular scaffolding "heaving bar" sufficiently long to allow as many men as possible to perform heaving or abdominal exercises at the same time.

Dress.—Denim trousers, boots and gaiters ; stripped to the waist.

PART I.—LIMBERING-UP (7 minutes)

1. *Running.—Dodge and mark.*
2. *Arm.—(Astride) Arm swinging forward-upward with increasing range to reach arms upward position on third count, followed by arm swinging forward-upward three times.*
3. *Trunk.—Obstinate mule (Fig 10).*
4. *Leg.—Astride jumping with arm swinging sideways-upward, followed by two skip jumps when feet are together.*
5. *Arm.—Poison (Fig 34).*

6. *Trunk.*—(Astride) Relaxed trunk bending downward to touch ground with finger tips or palms of hands, to three counts, followed by trunk stretching upward with arm swinging sideways on fourth count.
7. *Leg.*—Jumping to head an imaginary football (Fig 60).

PART II.—GROUP ACTIVITIES (10 minutes)

Group 1.—Strength (half the class).

- (a) (Hanging, over grasp) Knee raising, leg stretching forward and lowering (tubular scaffolding) Fig 71)
and
- (b) (Hanging, over grasp) Arm bending to bring chest as near as possible to apparatus (Fig 109).

Group 2.—Endurance (half the class).

Scout pace.

NOTE.—After 5 minutes the two halves of the class change over, so that in the 10 minutes every man completes 5 minutes of Group 1 and 5 minutes of Group 2.

PART III.—CARRIAGE (3 minutes)

1. Re-form class in three ranks.
2. Position of attention.
3. Marching in squad formation.

33. Example 3

Duration.—30 minutes.

Class.—30 men of a Field Company, Royal Engineers.

Place.—Outdoors.

Equipment.—Two logs, each about 12–14 feet long, and one pick and one shovel per man.

Dress.—Denim trousers, boots and gaiters; stripped to the waist for Part I. Denim clothing, boots, gaiters and steel helmet for Parts II and III.

PART I.—GAME-FORM EXERCISES (7 minutes)

1. *Running.*—Horses and jockeys.
2. *Arm.*—Advantage wrestle (Fig 4).
3. *Trunk.*—Pulling and touching the ground (Fig 13).
4. *Leg.*—Hopping tug-of-war (Fig 19).
5. *Arm.*—Sawing, Method II (Fig 40).
6. *Trunk.*—Neck lift (Fig 53).
7. *Leg.*—Squat charges (Fig 67).

PART II.—GROUP ACTIVITIES (20 minutes)

Group I.—Strength (half the class).

Leg exercises.

- (a) (Astride, log on one shoulder) Arm stretching upward and bending, placing log on opposite shoulder (Fig 143).
- (b) (Astride, log under one arm) Trunk bending sideways towards log with opposite arm swinging sideways-upward (Fig 159).

Quick reaction activity.—Competitive log passing sideways (Fig 180).

- (c) (Sitting, alternate sides, facing opposite directions, log in crook of arms) Trunk bending downward (lowering backward) and lowering backward (bending downward) (Fig 163).
- (d) (One foot forward, facing, alternate sides of log, one hand under grasp, one hand over grasp) Log circling forward and backward (Fig 167).

Quick reaction activity.—(Two teams facing each other about 10-15 yards apart, log on ground midway between teams) Race to pick up log and push or pull it over opponents' starting line (Fig 185).

Group 2.—Dexterity (half the class).

Pick and shovel exercises.

- (a) (Ready position—pick) With the right hand raise the pick slowly to the vertical position in front of the body, and at the same time, slide the right hand down the helve until it touches the left hand. After a slight pause lower the pick to the ready position. Repeat exercise with the pick head facing to the opposite side (Fig 363).
- (b) (Ready position—pick) Relax the right hand grip and allow the pick to swing slowly downward past the legs and sideways-upward to the raised position over the left shoulder. Repeat the exercise from side to side (Fig 364).
- (c) (Ready position—pick) Point the pick to the front by slowly raising the arms forward to shoulder-height and sliding the right hand down the helve until it touches the left hand. After a brief pause return to the ready position (Fig 365).
- (d) (Ready position—shovel) Bend the knees slightly and swing the shovel backward with weight of body on right foot, left arm straight and left hand near right knee (Fig 367 (a)). Swing body and shovel forward as if filling the shovel, bending the left knee and the weight of the body behind the thrust (Fig. 367 (b)). Depress the "T" piece of helve and return to ready position by straightening the back and the knees (Fig. 367 (c)).
- (e) (Ready position—shovel) Slide the left hand down the helve and point the shovel forward, with straight arms raised to shoulder-height. After a slight pause return to the ready position (Fig 368).

NOTE.—10 minutes for each group and then change over.

PART III.—CARRIAGE (3 minutes)

1. Re-form class in three ranks.
2. Position of attention.
3. Marching in squad formation.

34. Example 4

Duration.—40 minutes.

Class.—30 men of Infantry Field Unit.

Place.—Outdoors, grass area.

Equipment.—6-pr. gun, two sticks, and two medicine balls.

Dress.—Denim trousers, boots and gaiters; stripped to waist for Part I. Add denim blouse for Part II.

PART I.—LIMBERING-UP (7 minutes)

1. *Running*.—Running or walking in large circle; on signal sprinting or rapid walking to pass man in front.
2. *Arm*.—Arm raising and lowering against partner's resistance (Fig 7).
3. *Trunk*.—Elbows interlocked—pushing (Fig 16).
4. *Leg*.—Touch toes jump (Fig 26).
5. *Arm*.—(Astride, across bend, hands loosely closed) Elbow circling backward slowly with shoulder rolling.
6. *Trunk*.—Relaxed trunk bending downward to touch floor with finger tips or palms of hands, followed by knee bending forward to crouch, followed by knee stretching with relaxed trunk bending downward to touch floor.
7. Skip jumping with knee raising high after given count.

Quick reaction activity.—Crows and cranes.

PART II.—GROUP ACTIVITIES (30 minutes)*Group 1. Strength.*

Manhandling 8-pdr. gun.

Group 2.—Agility.

(a) Fieldcraft game—Freezing.

(b) Short spell of hands and knees crawl at speed, followed by leopard crawl.

Group 3.—Speed.

(a) Sprint relay.

(b) Over and under stick relay.

(c) Racing tunnel ball.

NOTE.—For the above activities the class will be divided into three groups and the men will change round, as in potted sports, from activity to activity every 10 minutes.

PART III.—CARRIAGE (3 minutes)

1. Re-form class in three ranks.

2. Position of attention.

3. Marching in squad formation.

35. Example 5

Duration.—50 minutes.

Class.—32 men of an Infantry Field Unit undergoing special toughening and hardening training.

Place.—Outdoors.

Equipment.—Vertical and inclined climbing ropes and obstacle course.

Dress.—Denim trousers, boots and gaiters; stripped to waist for Part I. Battle order for Parts II and III.

PART I.—GAME-FORM EXERCISES (7 minutes)

1. *Running*.—Chase the dodger ("Chase him").
2. *Arm*.—Pushing wrestle (Fig 3).
3. *Trunk*.—Rolling log (Fig 14).
4. *Leg*.—One leg combat (Fig 25).
5. *Arm*.—(Prone lying) One hand wrestle (Fig 35).
6. *Trunk*.—Lifting the sack (Fig 46).
7. *Leg*.—Elbows interlocked, pushing backward (Fig 68).
8. *Relay race*.—Carry men in threes (Fig 439).

PART II.—GROUP ACTIVITIES (40 minutes)*Group 1.—Strength.*

Climbing vertical and inclined ropes, using arms and legs (Figs 76 and 83).

Group 2.—Endurance.

Endurance running.

Group 3.—Agility.

Obstacle course.

Group 4.—Combat.

Close combat.

NOTE.—For the above activities the class will be divided into four groups, and the men will change round, as in potted sports, from activity to activity every 10 minutes.

PART III.—CARRIAGE (3 minutes)

1. Re-form class in three ranks.
2. Position of attention.
3. Marching in squad formation.

36. The following are two examples of ten minutes individual "keep-fit" periods for officers and other ranks whose work is sedentary and who are unable to join a regular physical training class. If possible, the exercises should be performed out-of-doors, or in a well-ventilated room. It is obvious that individual periods of this type must vary considerably according to the age, build and degree of general fitness of the individual concerned. To be of any real value these or similar exercises adapted to the needs of the individual must be performed daily, and with the necessary vigour.

Example 6 (see Page 147)

1. *Arm and shoulder.*—(Astride, one hand on hip) One arm circling backward (5 left, 5 right, 5 left, 5 right). Vary with both arms circling backward (10 times) (Fig 455).
2. *Trunk.*— (i) (Astride) Trunk bending from side to side (10 times) (Fig 456).
 (ii) (Astride) Relaxed trunk bending downward to touch floor with finger tips and trunk unrolling (5 times) (Fig 457).
3. *Leg.*—(Feet closed) Alternate heel raising (10 times) (Fig 458). Vary with raising both heels (10 times).
4. *Arm and shoulder.*—(Astride, arms across bend, hands loosely closed) Elbow pressing backward (1), followed by arm swinging forward-sideways (2) (5 times) (Fig 459).
5. *Trunk.*— (i) (Sitting with legs astride) Trunk turning from side to side (10 times) (Fig 480).
 (ii) (Back lying, knees bent, feet on floor) Flatten back against floor by contracting abdominal muscles (5 times, gradually increasing to 10 times) (Fig 461).
 (iii) (Prone lying, hands on hips) Trunk raising (5 times, gradually increasing to 10 times) (Fig 462).
6. *Leg.*—(Grasp a chair or table) Heel raising and knee bending, keeping the knees together (5 times, gradually increasing to 10 times) (Fig 463).
7. *Breathing.*—(Back lying, knees bent, feet on floor) Deep breathing (Fig 464).

Example 7 (see Pages 147 and 148)

1. *Arm and shoulder.*—(Astride, across bend, hands loosely closed) Elbow circling backward slowly with shoulder rolling (5-10 times) (Fig 465).
2. *Trunk.*—(Astride, hands on hips) Trunk rolling (5 times in each direction) (Fig 466).
3. *Leg.*—(Grasp back of chair) Bending both knees fully and knee springing several times in this position, followed by knee stretching to heels fully raised position (5-10 times) (Fig 467).
4. *Trunk.*— (i) (Hands on chair) High front support, bending and stretching the arms (5-10 times) (Fig 468).
 (ii) (Sit on chair) Raising the legs to a "V" position with hands assisting (5-10 times) (Fig 469).
5. *Leg.*— (i) (One hand grasping chair, one hand on hip) One leg swinging high forward and backward (5-10 times with each leg) (Fig 470).
 (ii) (Grasp back of chair) Hopping with leg swinging sideways (5-10 times with each leg) (Fig 471).
6. *Trunk.*—(Sit with back pressed against chair) Bend the head backward as far as possible (5-10 times) (Fig 472).
7. *Breathing.*—(Back lying, knees bent, feet on floor) Deep breathing (Fig 464).

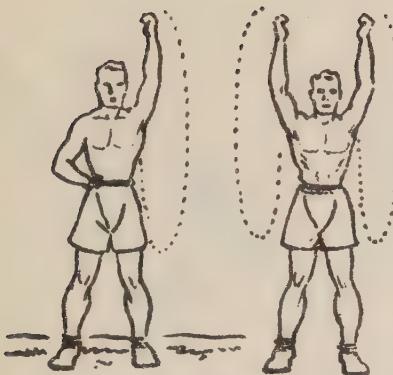


Fig. 455.

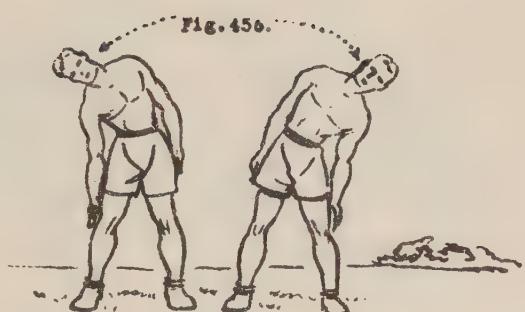


Fig. 456.

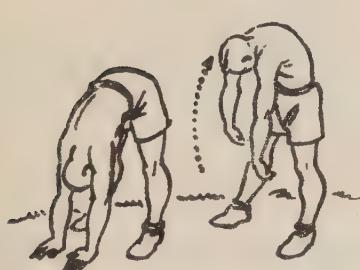


Fig. 457.



Fig. 458.

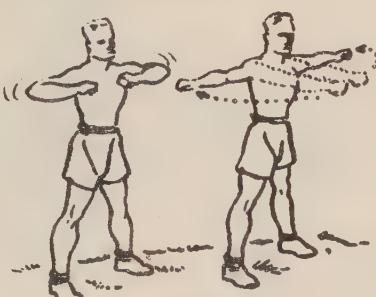


Fig. 459.



Fig. 460.



Fig. 461.

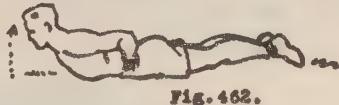


Fig. 462.



Fig. 463.

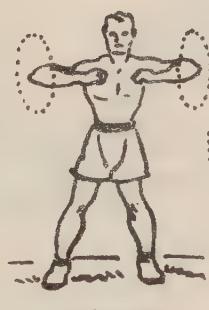


Fig. 464.



Fig. 465.

Knee
Springs.

Fig. 467.



Fig. 467.

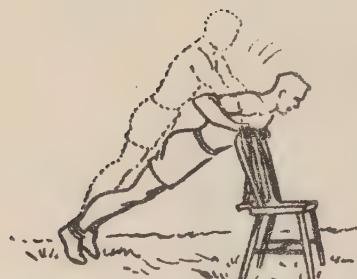


Fig. 468.



Fig. 469.



Fig. 470.



Fig. 471.



Fig. 472.

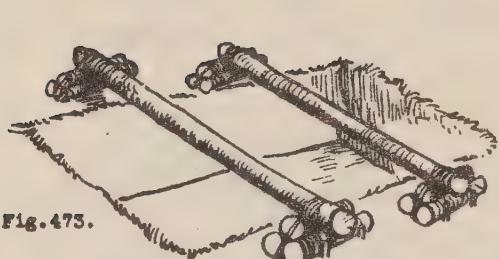


Fig. 473.

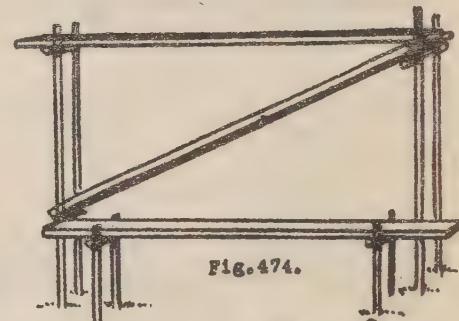


Fig. 474.

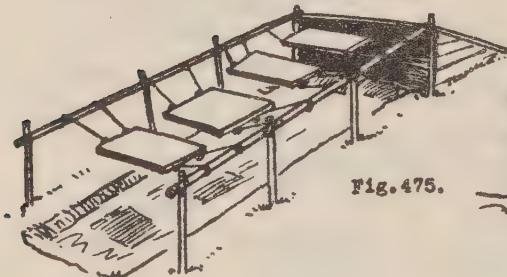


Fig. 475.



Fig. 476.

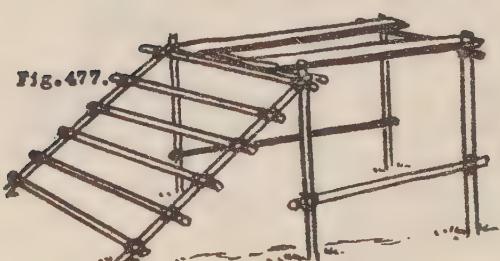


Fig. 477.

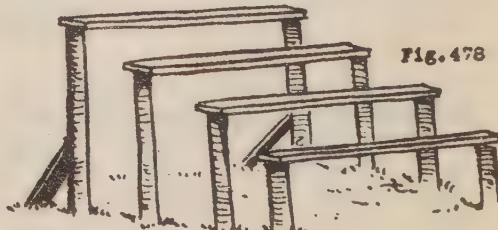


Fig. 478.

SECTION 8.—THE WORK OF THE DIVISIONAL PHYSICAL TRAINING SECTION

37. The principle of allotting a section of APTC instructors to each operational division has proved most successful. Primary and corps training units, and holding units, all contribute to a progressive scheme of physical development and preparation for battle, but it is the divisional section of APTC instructors which has the responsibility of maintaining the high standard of physical fitness required by field force troops immediately before, during and after operational periods in the line. Modern warfare demands qualities of toughness and endurance which must reach their peak just before the battle. Every soldier must be able to continue fighting longer than his opponent, and he must be able to recover more quickly than the enemy from exhaustion, or other causes which place him temporarily *hors de combat*. It is the concern of the divisional APTC instructors to see that these objects are attained.

38. Generally speaking, the divisional soldier will usually enter the theatre of operations as fit as modern training methods can make him, but there will probably be a short waiting period of preparation before he is actually engaged in battle. During this period he should be exercised sufficiently to help him to maintain a good physical condition. Battle physical training at this stage should be made as interesting and recreational as possible. It should give the soldier full confidence in his ability to meet all contingencies.

39. Many divisions and brigades have a small rehabilitation wing at their training school where men suffering from "battle exhaustion" and minor injuries are treated. An intelligent programme of physical activities conducted by the PT instructors, under the general guidance of the medical officers, will reduce the time of ineffectiveness and quickly "re-fit" the soldier for battle. This reconditioning of "ineffectives" is an important part of the work of the divisional APTC instructors.

40. During periods out of the line, the men will require special attention from the divisional physical training section. Unless they are to undergo training for a particular operation their needs will probably best be met by an attractive recreational programme. This programme will depend upon the length of time the men are "resting," but if the period is to be more than three or four days unit recreation will be of primary importance. Potted sports and team games of all kinds will require previous preparation, by the APTC instructors, of pitches and courts, and the provision of the necessary apparatus to enable a lively competitive programme to be carried out. A mobile equipment depot in the form of a three-ton lorry carrying all the necessary equipment for boxing, basket ball, quoit-tennis, volley ball, cricket, football, hockey, as well as medicine balls, logs, tug-of-war rope and an improvised boxing ring, can be rushed to the brigade or other formation area to enable all the necessary arrangements to be made without delay.

41. If the formation is out of the line for training, the APTC instructors will see that any particular requirements are met, in addition to giving a general physical toning up through a normal progressive scheme of training. They will also be required, from

time to time, to give intensive courses of instruction in such activities as close combat, climbing and scaling, toggle rope work, individual fieldcraft movements and surmounting obstacles. All this demands concentrated effort on the part of the instructors, and much ingenuity in adaptation and improvisation.

42. The actual dispersal of the divisional APTC instructors will vary with the operational commitments of the division, and it is difficult, therefore, to lay down any hard and fast rule. They may work together as a team in a formation, or even in a unit, or they may be split up and attached to a number of units, according to the nature of the work they are to undertake. This work will be very varied. In addition to recreational training and reconditioning work, which have already been mentioned, the divisional PT section may be required to run cadre courses for regimental officers and NCOs ; to give demonstrations of battle physical training to units, and to undertake intensive courses of instruction in such purposeful activities as close combat, or climbing and scaling.

SECTION 9.—PHYSICAL AND RECREATIONAL TRAINING OF MILITARY PERSONNEL WHILST ON BOARD TROOPSHIPS

43. **Object.**—In view of the paramount necessity for all ranks to arrive fit to fight at their overseas destinations, officers commanding troops in troopships are held responsible for organizing physical and recreational training for all ranks on board. This is especially important on long voyages, for even well-trained soldiers easily lose their fitness and get out of condition. Difficulties appear from all angles, but most of these can be overcome if the will to succeed is there, and the training is properly organized. A warrant officer-instructor of the APTC is now appointed to each troopship where the voyage is to be a long one. He is responsible to the OC troops for the organization of the physical and recreational training on board. The ultimate object is to ensure that all ranks arrive at their destination as fit as possible so that they will be ready to go straight into hardening training or to undertake whatever tasks await them on landing. The training on board must be organized in such a manner that, so far as possible, all ranks participate in some form of physical or recreational training every day. This training will not only keep the men physically fit, but will also help to overcome boredom, which is the soldiers' worst enemy on board ship.

44. **Preliminary training before embarkation.**—Officers commanding transit camps and units warned for overseas should enlist the aid of the Staff Officer of Physical Training of the particular Command so that short preliminary courses of suitable physical and recreational training for use on troopships may be organized wherever possible for junior officers and NCOs. These courses should serve to emphasize the need for training of this type on board ship and should also show that much useful and beneficial work can be accomplished even in a restricted space. In addition, after a short course, many of the NCOs should be in a position to help the APTC instructor by taking charge of classes during the voyage. On each day of the course, activities suitable to certain assumed conditions of space, weather, climate and equipment, should be practised

and discussed so that when the officers and NCOs come to face the actual problems and difficulties of physical and recreational training on board ship they will have had some preliminary experience of the type of work most suitable for the particular conditions.

45. Equipment on board troopships.—The amount of PT equipment for each ship varies according to the strength of the personnel carried. The scale is laid down in WO letter 57/Gen/1153/OS8 dated 17 June 41 and in Equipment Regulations, 1942, Part I. This equipment includes boxing gloves, punch pads, skipping ropes, medicine balls, sticks, and gymnastic mats. Tug-of-war ropes, climbing ropes, scrambling nets and boxing rings are not included, but often much help can be obtained from the ship's staff in supplying or improvising some or all of these items. In order that PT equipment may be readily accessible, arrangements should be made for it to be kept under the care and at the disposal of the APTC instructor.

46. Lay-out of deck space.—It is sometimes possible for the APTC instructor to obtain a blue print showing the deck space. On this he should plan his training areas, after having ascertained that they will be available during the voyage at specified periods each day for PT. If a blue print is not available, the instructor should make a rough sketch of the proposed training areas. This should be submitted, together with the proposed physical training programme, to the OC troops for approval.

47. Staffing.—OC troops should detail a suitably qualified officer to supervise physical and recreational training, and the APTC instructor will work under his instructions. All unit assistant physical and recreational training instructors should be made available to take classes. Assistant instructors will have a full day's work if all units are given physical and/or recreational training daily, and this should comprise the main duty of these NCOs during the voyage.

48. Programme of physical training.—A scheme of training should be drawn up by the APTC instructor for the voyage. This is not an easy task since the deck space that is available for physical training is usually very limited. The instructor will need to use considerable initiative and ingenuity to make the best possible use of the small space available. Periods should be of from 20–30 minutes duration and, so far as possible, there should be at least one period daily for some form of physical or recreational training. Many of the exercises and activities given in the lists in Section 5 of this pamphlet will be found very suitable for use on board ship and others will need only a small amount of adaptation to make them suitable. Most of the game-form exercises of Part I listed in paragraph 29 should require little adaptation to make them suitable for use on troopships. The group activities will not be quite so easily adapted, but the lists given in paragraph 29 are so comprehensive that the instructor will find many suitable activities for use in even the most restricted space. A number of games which are especially suitable for use on board ship are described in paragraph 52. Endurance running is possible in some ships, while in others the deck space is much too limited to allow of any form of running other than "running on the spot." Skip jumping, vaulting and similar exercises and activities may be allowed on certain decks only,

because of the danger of damage to ship's fixtures below the deck and because of night watches of the ship's staff resting. It is sometimes possible to obtain permission to erect and use ropes and scrambling nets for climbing and scaling practice. It may also be possible to obtain permission to use "cringle bars," where these are available, for heaving and abdominal exercises.

49. Recreation and competitions.—Competitions are most useful on board troopships to help to counteract boredom. Generally speaking, however, competitions in any one event should not be continued for more than three successive days, or interest will inevitably flag. Potted sports, and tug-of-war are great favourites. Boxing, wrestling or weight lifting can be arranged either in the form of competitions or demonstrations. "Black versus white" boxing and close combat demonstrations are popular and instructive. Many other suitable competitions can be organized by the officer in charge of physical and recreational training in co-operation with the APTC instructor.

50. Care of feet.—Experience has shown that men are frequently called upon to march comparatively long distances almost immediately after landing at their port of disembarkation. It is most important, therefore, that every man should keep his feet in good condition during the voyage. The officer in charge of physical and recreational training and the APTC instructor should discuss this matter with the OC troops and medical officer. Whenever possible, it is advisable for a period to be set aside each day when boots will be worn by the troops. It may also be necessary for the APTC instructor to teach the men a few simple foot strengthening exercises which they can do on their own, outside the PT period.

51. Liaison between the APTC instructor and the ship's staff.—The instructor should try to enlist the active interest and co-operation of various members of the ship's staff. The ship's carpenter can often be especially helpful in the improvisation and erection of boxing rings, the provision of tug-of-war and climbing ropes, or scrambling nets. Scales for the weighing-in of men for boxing and tug-of-war competitions can sometimes be borrowed from the ship's butcher, while the Orderly Room Sergeant-Major may be willing to arrange for the typing and duplicating of programmes for competitions, programmes of work, and special notices concerning physical and recreational training.

52. Games and individual competitive activities.—The following are examples of games and individual competitive activities especially suitable for use on board ship :—

(a) *Games.*

(i) *Charlie Chaplin run.*

One medicine ball, one boxing glove and one stick are required for each team. Place these articles in a straight line in the following order :—

Medicine ball * (10 yds from starting line).

Boxing glove * 10 yds beyond medicine ball).

Stick *(5 yds beyond boxing glove).

* These distances can be modified according to space available.

Each team should consist of five players. The leader of each team stands with his toes touching the starting line, with the rest of the team behind him.

On the signal, No. 1 of each team runs forward to the medicine ball, which he picks up and places between his knees. He then runs forward, still keeping the medicine ball between his knees, to the boxing glove, which he places on top of his head. He then runs and picks up the stick, turns and runs back to the starting line, still keeping the ball between his knees, the boxing glove on his head, and twisting the stick like a walking stick. No. 2 of each team quickly replaces the kit and runs back to touch No. 3, who repeats the movements of No. 1, and so on; the odd numbers performing the movements and the even numbers replacing the kit. The game is repeated with the even numbers performing the movements and the odd numbers replacing the kit. The winning team is the one whose five members first complete the game.

(ii) *Statues.*

The players run in a circle. On the signal to stop, they must assume and maintain a position representing an activity (eg, digging, lighting a cigarette, etc.). Each player must be prepared to say what activity he has chosen to represent.

(iii) *Bucking bronco.*

Players in pairs, No. 1 on all fours and No. 2 on No. 1's back, No. 1 tries to upset No. 2 from his back. They then change places and repeat the game.

(iv) *Names and numbers.*

Players stand or sit in a circle, each one having been given a number. The instructor calls out a number and the player concerned must at once shout out his name. If the instructor gives a player a name, the latter must immediately give his number, and so on.

(v) *Tunnel ball progression.*

A medicine ball is required for each team of five. The players, except No. 1, are in rank formation in front support position. No. 1 of each team stands at the head of his team holding the ball. On the signal, he throws the ball "through the tunnel" to No. 5, who must catch it, pick it up and stride over the legs of the other players to the head of the team. Each player bends his arms to prone lying position as soon as the ball has passed him. No. 5 repeats

the throw, each player straightening his arms to front support position to let the ball pass "through the tunnel." The winning team is the one which first completes the game.

(vi) *Steer the ship.*

Several players to each stick and astride it. The leader faces the rest of his team and, holding the stick, "steers the ship" between several medicine balls.

(vii) *Deck tag.*

Players stand in small circles. A "catcher" stands inside each circle. Players run round in circle track, each player being separated from the player in front of him, and the player behind him, by one or more yards, according to space available. The "catcher" tries to touch one of the others before he gets his hand on the deck. If the "catcher" succeeds, they change places.

(viii) *Duck walk relay.*

Played as an ordinary running relay race, with teams of 5 or 6 players, except that players walk in knees full bend forward position with hands on knees, instead of running forward.

(ix) *Heel run relay.*

Played as an ordinary relay race, except that the runner, travelling with short rapid strides, runs forward on his heels. The toes must be kept clear of the deck throughout the race.

(x) *Indian wrestle.*

Two players lie on their back facing in opposite directions, side by side, with adjacent arms locked. On the signal the adjacent legs are brought to an upright position and interlocked at the knees. The wrestle consists in trying to force the opponent to roll over from his position.

(xi) *Hand wrestle.*

The wrestlers stand with the right (left) foot forward, grasping opponent's right (left) hand. The object is to make opponent move a foot from its position on the deck, which constitutes a "throw."

(xii) *Finger touch.*

Players stand facing in pairs. No. 1 places his hands, finger tips touching in arms across bend position. No. 2, by grasping No. 1's wrists and using a steady pull, tries to separate his finger tips.

(xiii) *Chinese get-up.*

Players stand back to back in pairs and with elbows interlocked. They then sit down and stand up without unlocking the elbows.

(xiv) *Shoulder fight.*

Two players each grasping his own ankles face each other, and try to shoulder the opponent so as to make him either release the grasp on his ankles or fall over.

(xv) *Catch and pull tug-of-war.*

Draw a line down the middle of the playing area. Divide the players into two equal teams, one team on either side of the line. On the signal, the players reach over the line, catch hold of an opponent by any part of his body, and try to pull him across the line. Any number of players may try to secure a hold on an opponent and any member of his own team may come to his rescue, either by pulling him in the opposite direction or by trying to secure a hold on one of the opponents. A player is not captured until his entire body has been pulled over the line. He then joins his captors in trying to secure players. The team wins which has the largest number of players at the end of a time limit, or has secured all the opponents.

(xvi) *King of the ring.*

Players stand in a circle in a compact group, arms folded and held close to the body. On a signal, each tries to "charge" his neighbour out of the circle. If any player unfolds his arms, or falls, or has both feet outside the circle, he is out of the game. The player who is finally left in the circle is "King of the ring."

(xvii) *Tie-up.*

Players in pairs, each holding a handkerchief or short piece of rope. On a signal, each tries to tie his opponent's legs together with the handkerchief or piece of rope.

(xviii) *Catch the tail.*

Players in teams in file (not more than 5 men to a team), hands round the waist of the man in front. The leader of each team tries to touch the last player in his team. The winning team is the one which first succeeds in doing so.

(xix) *Bull in the ring.*

This is an inter-team contest played on the knock-out system. Each team forms a ring with hands

joined by grasping wrists. One player ("the bull") from each team is selected to go into the "ring" of an opposing team. On the signal, each bull tries to get outside his ring, either by breaking it or by dodging under the arms of the players forming the ring. The latter resist and try to prevent the bull getting out. The team wins whose representative first breaks through its opponent's ring.

(xx) *Pinch-O.*

Two teams stand in ranks facing each other about one yard apart, hands behind backs. The right hand man of one team calls out "Pinch" and touches the man on his left who passes the pinch on to his left hand man, and so on until it reaches the last man, who calls out "O." This is the signal for the whole of this team to turn and run, chased by the men of the other team. The ranks are re-formed and the game is repeated, the other team sending the pinch along the line and then running. Every effort should be made, of course, to conceal where the "pinch" has reached, and it is therefore essential that the men should stand close together, shoulder to shoulder, in the rank. The winning team is the one which catches the highest number of opponents.

(b) *Individual competitive activities.*

(i) *Stooping stretch.*

Place both heels against a line and about one foot apart. With a piece of chalk held by both hands, bend forward with knees straight and make a mark on the deck as far back between the feet as possible. Regain the starting position without removing the feet from the line or touching the deck with the hands. If it is impossible to touch the deck with the chalk held in both hands, try with either right or left hand.

(ii) *Knee dip.*

Stand on left (right) foot, grasping the right (left) foot at the instep with the right (left) hand. Bend the left knee and try to touch the deck with the right (left) knee.

(iii) *Heel and toe spring.*

Draw a line on the deck. Place the heels against this line, bend down and grasp the toes with the fingers underneath the feet and pointing backwards towards the heels. Lean forward slightly and then jump backward over the line, while retaining grasp. Try to jump forward in a similar manner.

(iv) *Ankle throw.*

A ball is held firmly between the feet. With a jump the feet are kicked backward so as to jerk the ball into an upward movement, which should end in the ball curving forward over the head to be caught by the hands in front of the body.

(v) *Long reach.*

Mark a line on the deck. Toe this line and with a piece of chalk mark the deck as far as possible from the line, rising again to position without having moved the toes from the line. In returning to position, the hand which has supported the body in stooping to make the mark must not be drawn along the deck or placed a second time on it.

NOTE.—Many other suitable game-form exercises, either for use as games or as individual competitions, will be found in the list of game-form exercises for Part I of the battle physical training period (Section 5).

53. With good organization, reasonably calm weather, and a proper individual attitude towards the importance of physical fitness on the part of unit officers, medical officers and all NCOs, exemplified on physical or recreational training parades, units should arrive at their port of disembarkation as fit as possible.

CHAPTER 2**BATTLE PHYSICAL EFFICIENCY TESTS****SECTION 10.—THE PURPOSE**

54. The purpose of the battle physical efficiency tests is to give the individual soldier of field force units an estimate of his relative physical fitness for battle, and to encourage self-effort by creating a spirit of achievement in each individual. They also serve as a measure of the relative physical efficiency of the unit as a whole.

SECTION 11.—GENERAL PRINCIPLES

55. (a) Battle efficiency tests I–VII will be carried out at least twice a year by all ranks of Field Force Units who are 38 years of age or under, and of medical category A.I. Certain of these tests may be done by men of medical category A, consistent with their particular category.

(b) Tests VIII and IX will be carried out whenever and wherever swimming facilities are available.

(c) Except for the swimming tests, the dress will be as for battle, with rifle or the appropriate weapon for the arm of the service concerned, *eg.*, infantry will carry or wear, as a minimum, steel helmet, webbing equipment, rifle, bayonet and 50 rounds of SAA, or an equivalent weight. The waterbottle will be three-quarters full and the contents of the small pack will be normal.

(d) Many of the tests can be carried out during a PT period, using the potted sports method.

SECTION 12.—THE TESTS

56. Tests I-VII are divided into three groups—Agility, Strength and Endurance.

57. All the tests must be attempted, and to qualify as physically efficient *five* of the first seven tests, including one from each of the above three groups, must be passed.

58. The tests are as follows:—

AGILITY.

- I. With a run surmount a 6 ft wall without assistance.
- II. Jump a ditch 9 ft across, landing on both feet.
- III. Sprint 80 yds to a 30 yds firing point. Load with five rounds of .303. Fire five rounds on No. 3 target (200 yds size). To pass this test three hits on the target must be scored. Total time 60 secs.

STRENGTH.

- IV. Carry a man 200 yds by means of Fireman's Lift on the flat in 1 min. 45 secs. The man to be carried must be approximately the same weight as the carrier, and he must be dressed in battle order. The carrier will carry both rifles or other appropriate weapon.
- V. Climb a vertical rope 12 ft high, traverse a 20 ft span of horizontal rope and come down with the aid of a rope.

ENDURANCE.

- VI. Run 2 miles on roads in 18 mins.
- VII. Cover 10 miles on foot and then complete a similar firing practice to that of test III. The whole test, including the firing practice, to be completed in 2 hours.

SWIMMING.

- VIII. Swim 20 yds in denims with rifle and 50 rounds of ammunition. Boots to be attached to the rifle or slung round the neck. Steel helmet to be worn with the chin strap either in front of the forehead or round the back of the head.

IX. Swim 60 yds in fresh water, or 100 yds in salt water dressed in denims without equipment or boots, and then remain afloat out of depth for 2 minutes. It is not necessary to remain floating during this period, treading water and swimming around are permissible.

NOTE.—When carrying out tests VIII and IX reference will be made to King's Regulations, 1940, paragraph 812 (b) and to ACIs 1635/41 (as amended by ACI 1064/42) and 889/43, regarding safety precautions.

SECTION 13.—RECORDING OF RESULTS

59. The results of the above tests will be recorded in the soldier's AB 64 (Part I), page 4. The record will show the date on which the soldier was tested and the result, "Passed" or "Failed," for each separate test.

CHAPTER 3

IMPROVISATION OF APPARATUS

SECTION 14.—INTRODUCTION

60. As stated in paragraph 9 of this pamphlet, physical training apparatus is not normally provided for field force units. Many of the more purposeful or objective activities which comprise battle physical training require the use of apparatus. It will therefore be necessary for the APTC instructor who is attached to a field force unit to become expert at the improvisation and erection of the simple apparatus required to secure the maximum benefit from these purposeful activities. It cannot be too strongly emphasized, however, that the apparatus should be designed for the particular activity and not *vice versa*. There is sometimes a tendency to erect over-elaborate improvised apparatus and then to invent a large number of activities to suit the apparatus. The simpler the apparatus and the activities, the better.

61. During the war much excellent apparatus has been improvised for many field force units by the attached APTC instructors. Much ingenuity has been shown and even the most unpromising materials have been turned into most useful apparatus. A wide range of scrap materials has been used, and it is impossible in this brief Chapter to do more than indicate the types of apparatus that can be most usefully and effectively improvised. It is obvious that the availability of certain materials will vary considerably in different places and, to some extent, this will inevitably limit possibilities.

62. Much of the material used in the following examples can be obtained from salvage dumps, RE works departments and dock-yards. Units which are stationed near to the coast can often obtain tubular scaffolding.

SECTION 15.—EXAMPLES OF IMPROVISED APPARATUS

63. The following are examples of simple improvised apparatus and equipment for use in Part II of the physical training period for trained soldiers :—

(a) *For balancing.* (See Pages 148 and 161.)

- (i) Logs across ditches (Fig 473).
- (ii) Logs or planks at various heights above the ground (Fig 474).
- (iii) Swinging duckboards—method I (Fig 475).
- (iv) Swinging duckboards—method II (Fig 476).
- (v) Steps—method I (Fig 477).
- (vi) Steps—method II (Fig 478).
- (vii) Inclined logs and high balance (Fig 479).
- (viii) Plank bridge with gaps (Fig 480).
- (ix) Stepping stones (Fig 481).

(b) *For heaving.* (See Page 161.)

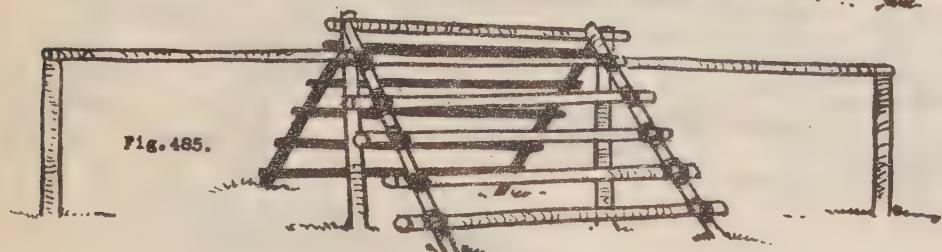
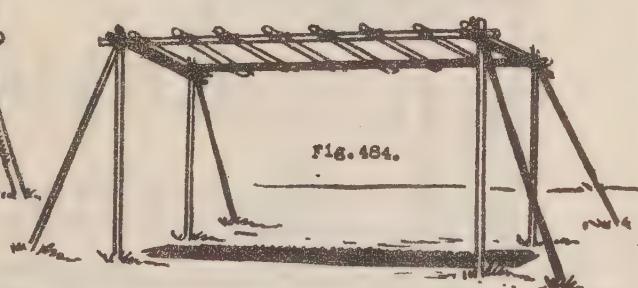
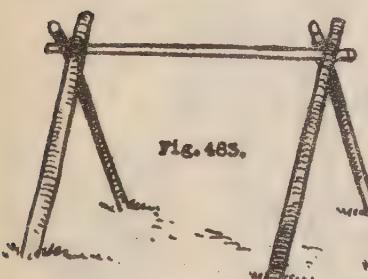
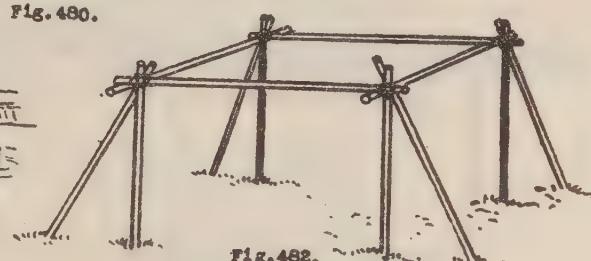
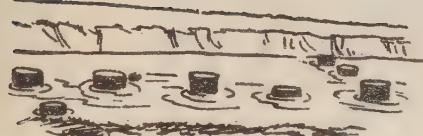
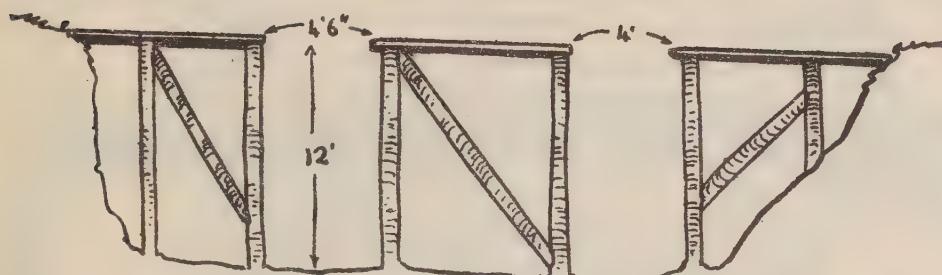
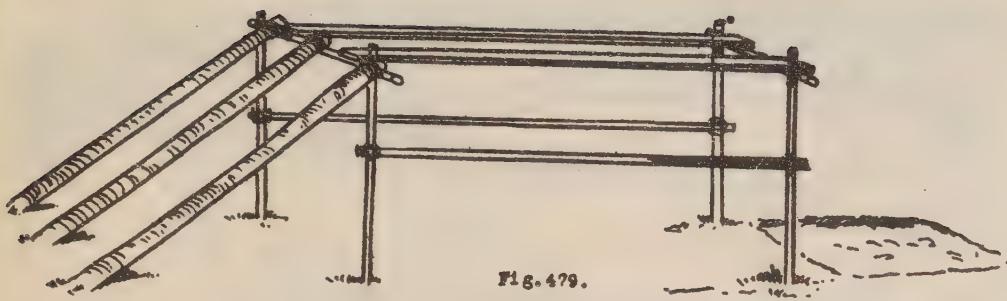
- (i) Heaving bar—method I (Fig 482).
- (ii) Heaving bar—method II (Fig 483).
- (iii) Horizontal ladder (Fig 484).
- (iv) Heaving bars and balancing steps combined (Fig 485).

(c) *For climbing.* (See Page 162.)

“ Whipsnade ” consisting of vertical, horizontal and inclined ropes, rope ladders, rope or wire bridges and scrambling nets (Fig 486).

(d) *For jumping.* (See Page 163.)

- (i) Widening ditch (Fig 487).
- (ii) Jump with high take-off (Fig 488).
- (iii) Double trench (Fig 489).
- (iv) Ramp (Fig 490).
- (v) Stream with bad take-off ground (Fig 491).
- (vi) Brushwood fence (Fig 492).
- (vii) Brushwood fence and stream, low side for landing (Fig 493).
- (viii) Water jump over brushwood fence (Fig 494).



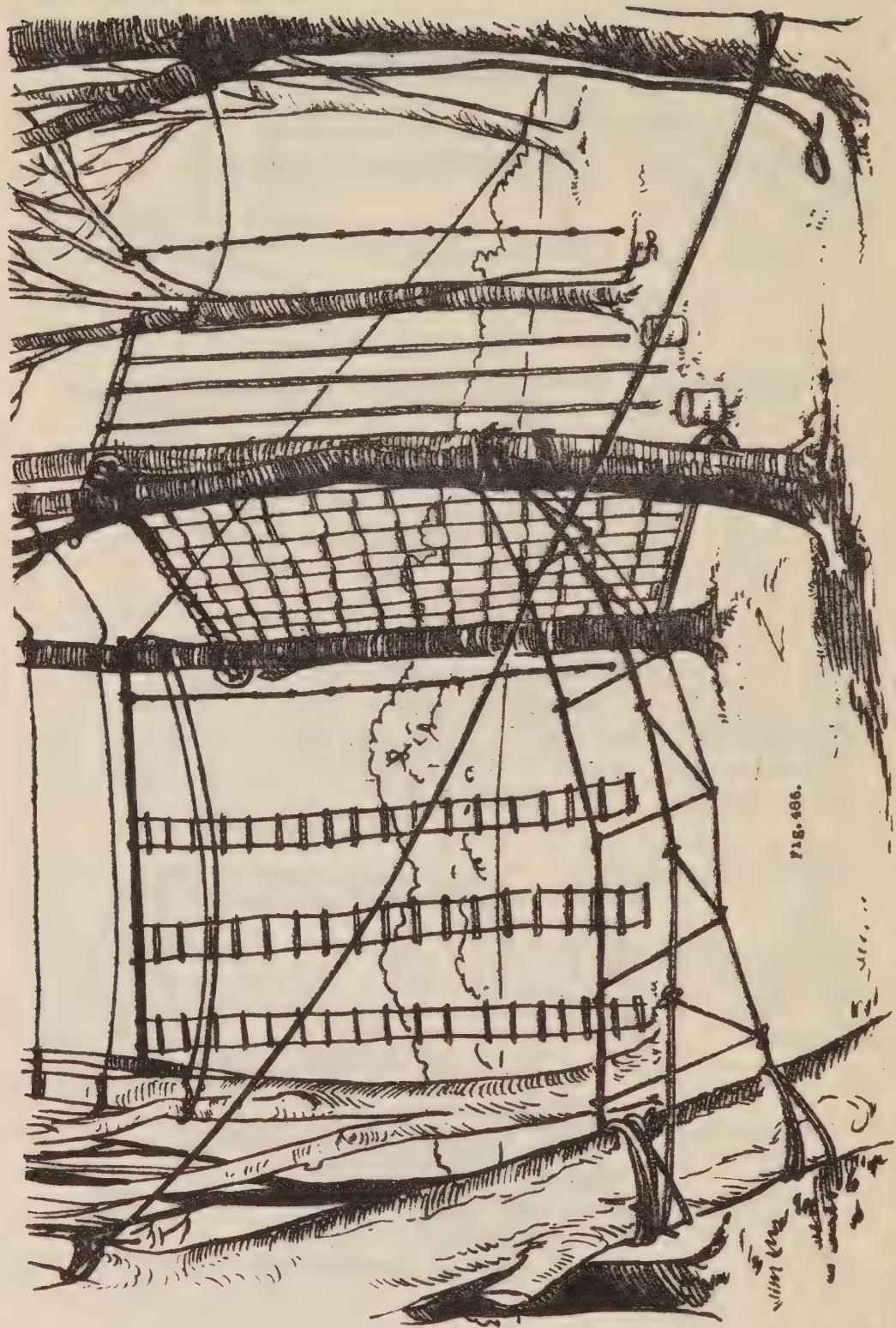




Fig. 487.



Fig. 488.



Fig. 489.



Fig. 490.



Fig. 491.



Fig. 492.

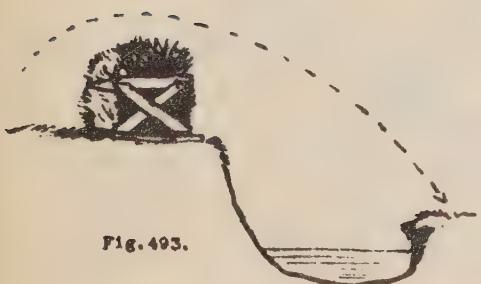


Fig. 493.



Fig. 494.

(e) *For scaling.* (See Page 165.)

- (i) Deep trench—method I (Fig 495).
- (ii) Deep trench—method II (Fig 496).
- (iii) High wall (Fig 497).

(f) *For vaulting.* (See Pages 165 and 166.)

- (i) Oil drum horse—method I (Fig 498).
- (ii) Oil drum horse—method II (Fig 499).
- (iii) Sandbag horse (Fig 500).
- (iv) Oil drum and log vaulting bar (Fig 501).
- (v) Log vaulting bar (Fig 502).
- (vi) Oil drum and sandbag horse (Fig 503).
- (vii) Turf horse (Fig 504).
- (viii) Petrol tin horse (Fig 505).
- (ix) Log horse (Fig 506).
- (x) Tubular scaffolding vaulting bar (Fig 507).
- (xi) Gate and low wall (Fig 508).

(g) *Medicine ball, punch pad and punch sack.* (See Page 166.)

- (i) Medicine ball (Fig 509).
- (ii) Punch pad (Fig 510).
- (iii) Punch sack (Fig 511).

(h) *Storage racks.* (See Page 166.)

- (i) Rack for boxing kit (Fig 512).
- (ii) Rack for sticks, medicine balls, etc. (Fig 513).

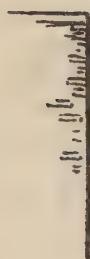


Fig. 495.



Fig. 496.

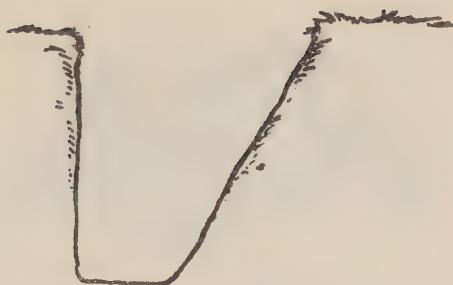


Fig. 497.

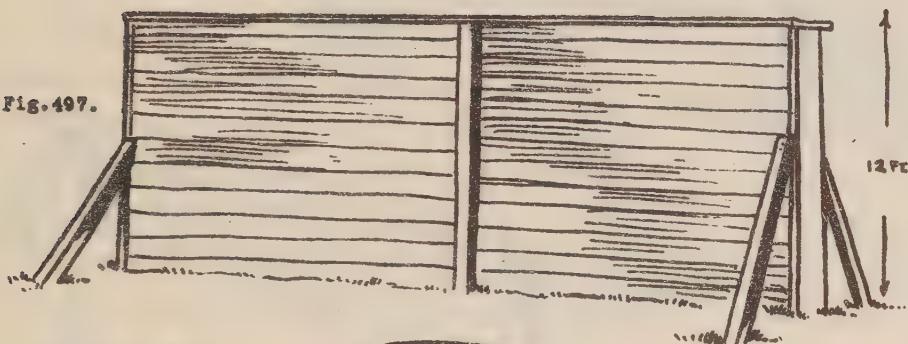


Fig. 499.

Fig. 500.

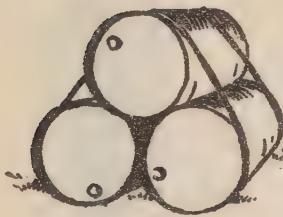


Fig. 498.

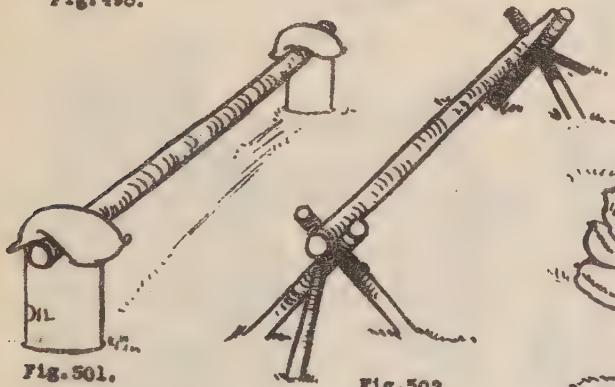


Fig. 501.

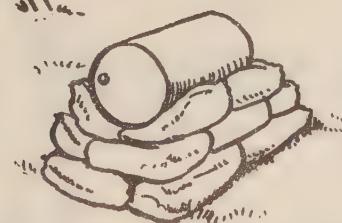


Fig. 502.

Fig. 503.

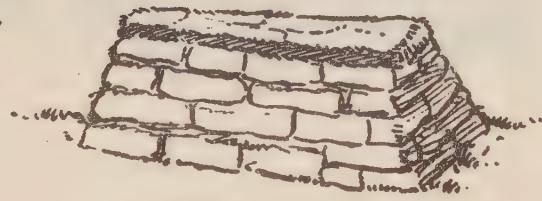


Fig. 504.



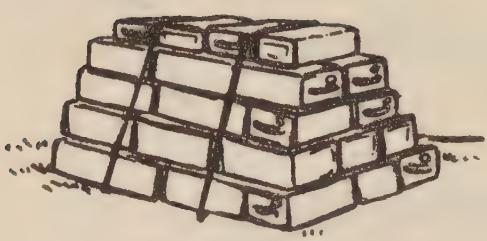


Fig. 505.

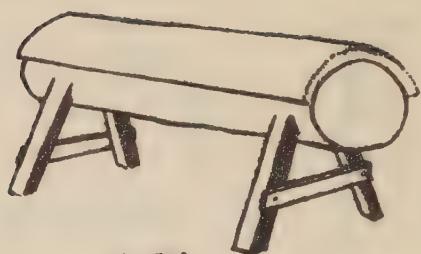


Fig. 506.

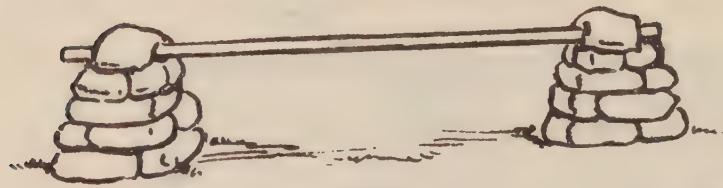
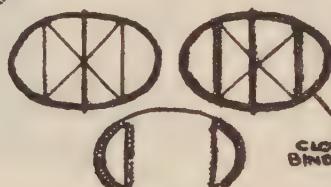
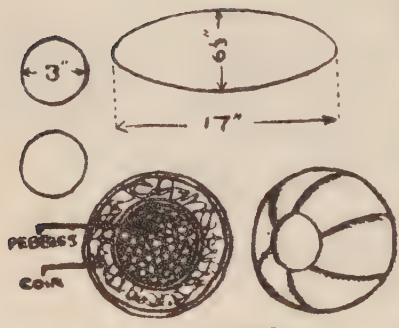


Fig. 507.



Fig. 508.



CLOTH BINDING



Fig. 511.

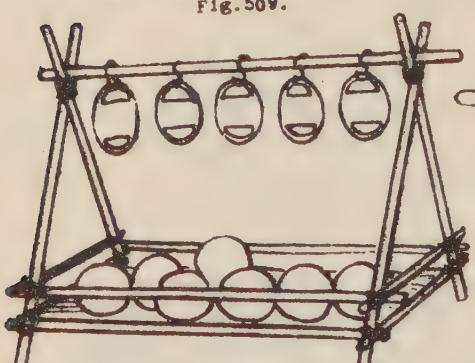


Fig. 512.

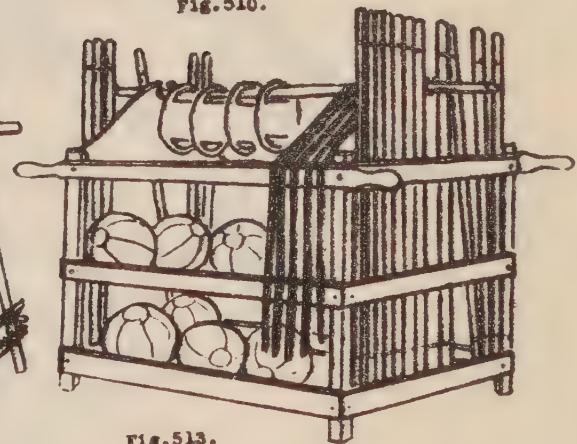


Fig. 513.

**SECTION 16.—MAINTENANCE AND CARE OF
IMPROVISED APPARATUS**

64. To ensure safety a thorough periodical inspection by the APTC instructor of all improvised apparatus is essential. The clamps on tubular scaffolding should be tightened, and any slackness in ropes and wires that are intended to be taut should be adjusted. All ropes should be taken down at frequent intervals and carefully tested. It is advisable to give ropes a coating of oil to prevent rotting. At the inspection all nuts and bolts should be thoroughly examined and, if necessary, oiled and greased or adjusted. Logs and planks which have to bear weight should be inspected for cracks or weakness, and essential repairs should be made before they are used again. Sandbags or oil drums used to make vaulting horses should be replaced as soon as they become unserviceable. It is also important to see that there is no unevenness on the top surface of vaulting horses made of sandbags, oil drums or petrol tins. Lashing and splicing should also receive careful attention during the inspection, and where trenches or ramps are used the sides should be revetted and kept in good repair.

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